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TWO

MEMOIRS

ON THE

CESAREAN OPERATION.

By M. BAUDELOCQUE, Sen.

PROFESSOR OF MIDWIFERY IN THE SCHOOL OF MEDICINE OF PARIS,

&c. &c.

TRANSLATED FROM THE FRENCH;

WITH A PREFACE, NOTES, AN APPENDIX AND SIX ENGRAVINGS,

BY

JOHN HULL, M. D.

MANCHESTER:

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1801.

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PREFACE.

M. BACQUA, a surgeon at Nantes, having performed the cesarean operation with success upon the wife of Nicholas Gabory, on the 14th of May 1797, communicated a circumstantial account of it to the Society of Medicine at Paris. Messrs. Plessmann and Baudelocque were appointed by the Society to examine this case and to make a report upon it, which was read on the 18th of August 1798.

As a *Sequel to this Report* M. Baudelocque soon afterwards presented the first of the Memoirs, of which a translation is here laid before the public. It was read and discussed in the sittings of the 8th and 18th of September in the same year: And it was deemed of so much importance, that the Society, desirous of enabling the public at large to judge of the propriety and necessity of the cesarean operation, ordered it to be printed in the 25th No. of the work, entitled Recueil Périodique de la Société de Médicine, with a *Note* concerning the delivery of Mrs. Marville, a *Report* of the opening of her body and a *Resolution* expressive of its being the duty of practitioners to have recourse to this operation, whenever a case requiring it shall occur, and directed two hundred copies of it to be sent to the different administrative and judiciary bodies.

My attention had been for several years directed to the consideration of this important subject, when I was

first informed of the controversy, existing betwixt Mr Sacombe and his professional brethren at Paris, and that M. Baudelocque, equally celebrated as a writer, teacher and practitioner of Midwifery, had published an interesting Memoir, comprehending an account of seventy-three operations, which have occurred since the year 1750 and are consequently not included in the extensive collection, made by M. Simon and published in the *Mémoires de l'Academie Royale de Chirurgie.*

The utility of bringing a number of scattered cases into one point of view and thus affording to the reader an opportunity of perusing and comparing them with little trouble, or expence, must be obvious to every one. The necessity of this is particularly striking, when the subject is of a practical nature, is highly interesting to humanity, and has given rise to a diversity of opinion and several warm controversies amongst the practitioners of different nations, as is the case with the cesarean operation.

To determine the proportion of the successful to the unsuccessful cases of this operation, and to decide, or to enable others to decide, upon the best method of performing it, the most proper subsequent treatment of the patient &c, &c, I was induced to make a collection of all the cases of this kind, that I could meet with from the earliest period to the present time; to arrange the successful and unsuccessful operations in different tables and, whenever it was in my power, to give their dates, the names and places of abode, both of the operators and of the women operated upon, with such a detail of other circumstances as seemed likely, or necessary, to evince their respective authenticity, to direct our future practice and to enable us to determine how far the event,

when fatal, was imputable to the operation itself and its consequences, to the previous unfavourable, or hopeless, condition of the patient, or to the operation and the state of the patient combined.

Although I examined every book on the subject, to which I had access, I found myself unable to affix the dates, names &c, to several of the cases, comprised in my tables, and, as I could not, after taking a great deal of pains, procure M. Baudelocque's Memoir, which I had reason to believe would not only furnish me with the dates and other particulars, that I wanted, but also with several cases, with which I was totally unacquainted, I was under the necessity of laying my Tables before the public, less complete than I could have wished.

Whilst I regretted my inability to avail myself of the numerous cases, contained in this Memoir, I had the satisfaction to meet with an Extract from it, in the Medical and Physical Journal for June 1799, which I inserted in the first part of my *Second Letter to Mr. Simmons.* I afterwards met with a valuable Analysis of the Memoir in the Medical and Chirurgical Review for September 1799, which I have occasionally quoted and referred to in the second part of the same letter.

In the course of last month I was fortunate enough to procure the original Memoir from Hamburgh, as published separately from the *Recueil*, which I perused with great pleasure. However much I may differ in opinion from the author concerning some practical points, particularly with respect to the use of the crotchet, during the life of the child, and the advantage of inducing premature labour in cases of distortion of the pelvis, I cannot but regard his Memoir as a valuable production and I conceive, therefore, that I have been usefully employed in

giving it an english dress, adding some notes and promoting the circulation of it as far as is in my power.

The Notes, which I have added, have a *T* affixed to them, for the sake of distinction. These are neither so numerous, nor so long, perhaps, as might be expected by some readers: For, after having so recently published my sentiments, at full length, upon almost every point, relative to the cesarean operation, I have thought it unnecessary to repeat them here and have, for the most part, contented myself with giving references to my former publications.

When the first Memoir and a few pages of the Appendix * were printed, I received eight volumes and two numbers of the *Recueil Périodique de la Société de Médecine* and, on looking over the contents of these for additional information with respect to the cesarean operation, I discovered that M. Baudelocque had presented a second Memoir upon this subject to the Society and that both these Memoirs were published in the 5th volume of the work mentioned above. The second Memoir contains five additional cases with some remarks on the after-treatment of the patient &c, and I have thought it proper to publish a translation of this as well as the former.

The Appendix comprehends an account of five interesting cases of difficult parturition, arising from deformity of the pelvis, with remarks; some observations on the causes and cure of *Rachitis* and *Mulacosteon;* a nosological view of these two diseases; and three cases of the latter with an analysis of the urine of the patients. The consideration of these two affections of the bones,

* This has occasioned three of the pages of the Appendix to be wrong numbered, which the reader is requested to correct.

it is presumed, is not improperly introduced here, since they are the most common causes of that extreme deformity of the pelvis, which renders the operation of hysterotomy indispensably necessary.

The PLATES are added in order to give a clear idea of the discriminative characters of the different kinds of deformity, produced in the human pelvis by the two diseases above-mentioned. In my *Defence of the Cesarean Operation*, pages 193 &c, I have attempted to account for this remarkable diversity and beg leave to refer the reader to the explanation there given.

The three first plates exhibit a view of the superior aperture, a view of the inferior aperture and a lateral view, or profile, of the pelvis of Ellen Gyte, which became thus distorted in consequence of a softness of the bones, after she had born children.

The three last are mere Outlines, taken from three excellent engravings in the 4th volume of the Medical Observations and Inquiries. They exhibit three similar views of the pelvis of Martha Rhodes, which had been rendered thus deformed in her infancy, in consequence of ricketts.

The whole number of cesarean births, recorded in the *Tables*, contained in my two *Letters to Mr. Simmons* and in this publication, is two hundred and twenty-six. Of these the unsuccessful ones amount to ninety; the successful ones to one hundred and thirty-six; and, whatever objections may be raised to the authenticity of some of the latter description, published by Rousset and other early writers, I trust a sufficient number of well authenticated cases will be found amongst them to convince any reasonable and unprejudiced mind:

1st. *That the cesarean operation has in many instances saved the parent;*

2dly. *That it has generally, if not invariably, preserved the life of the child, when performed in time; and*

3dly. *That cases do occur (more frequently indeed than is commonly supposed), in which delivery by the natural passage is physically impossible and consequently, in which neither the parent, nor her offspring, can be preserved by any other means.*

MANCHESTER,
May 27, 1801.

CORRECTIONS.

Page	Line	
125.	14.	*For* see *read* sees
134.	15.	*For* Shone *read* Shore
135.	23.	*For* six *read* five
163.	15, 16.	*For* B C B D *read* B E B F
178.	4.	*For* two *read* four

FIRST MEMOIR.

RESEARCHES

AND

REFLECTIONS,

SERVING TO

ELUCIDATE THE FOLLOWING QUESTIONS:

1st. *Do cases exist, in which delivery by the natural passage is physically impossible ?*

2d. *These cases being determined to exist, is the Cesarean Operation indispensably necessary ?*

3d. *Is the Cesarean Operation inevitably fatal to the mother ?*

THE more extraordinary an operation appears in the eyes of the public, the more important it is in its consequences and the more uncommon the occasions of performing it are, the greater is the necessity of collecting the cases of it, which are always very much dispersed in consequence of their occurring at very distant periods; whether it be our intention to prove the utility of it, or

to demonstrate its dangers; to bring it to perfection, or to occasion it to be discontinued. The more loudly the cry of prohibition is heard against this operation, the more strongly do the glory of the healing art and the welfare of humanity, which constitutes its object, call upon the learned societies to examine it, to discuss its merits, to fix the degree of confidence, to which it is entitled, and the limits, within which it ought to be circumscribed. Considered in all these points of view, no surgical operation can with more propriety engage the attention of the Society of Medicine than the cesarean section: For none interests a greater number of parts, or exposes more, of which the sound state, at all times easily disturbed, is more necessary to the support of health and life: None is practised less frequently, or is more important in its consequences; whether we consider the advantages procured by it, when successfully, or the mischief resulting from it, when unsuccessfully performed: Lastly, no operation, during the two last centuries, has had more determined adversaries, or, perhaps, more enlightened partisans.

If the cesarean section be justly regarded as the grandest and the most dangerous operation

of surgery, it must also appear much more important in its object than any other, since by exposing the life of a single individual to danger, it may preserve two and sometimes three lives.

In collecting the observation of Mr. Bacqua (1) and all of a similar kind, the Society of Medicine has it less in view to offer to professional men new proofs of the advantages, derivable from the cesarean operation, than to furnish them with an opportunity of examining the facts, contained in these observations, of comparing them with one another and with those already published, even in the cases, wherein it has not been successful, in order to determine, what ought to be done to secure greater success hereafter, from what has been hitherto done to obtain it, and from what has probably been neglected in the unsuccessful cases. By publishing these new observations, the Society will occasion new light to be thrown upon the subject; its correspondents will be eager to communicate their reflections; facts, hitherto unknown, will be transmitted to it, and it will incorporate them with the mass of

(1) See No. XXIV. of this *Recueil*.

cases, which it is easy to collect at this time. If they be not all as consoling as those, of which we gave an account in one of the last sittings, the Society will be able to render them useful, by making them concur to the same end, that of fixing the opinion, which ought to be held concerning the cesarean operation. The Society may, in this respect, at the beginning of its brilliant career give it that sanction, which the Academy of Surgery would not have failed to have done in terminating its career, if it could have foreseen its approaching dissolution. It was long expected, that this celebrated Academy would pronounce its determination concerning the cesarean section; that it would fix the limits; that it would point out the best method of performing the operation, and assign both to it and to the section of the symphysis pubis their proper rank, provided both were retained. This remains ſtill to be done; a great number of materials awaits the hand, which is to arrange them; a still greater number, perhaps, is wanting; but the Society will obtain them, by directing its attention to this object, and each of its members will be eager to furnish what is in his power. The cesarean operation is once more become the subject of

a great controversy; it is the entrenchment, behind which are concealed the enemies of those spirited and enlightened men, who have dared to undertake it, and who, disregarding the poisoned darts, incessantly thrown against them, will, doubtless, continue to perform it, if they meet with new cases, wherein it is absolutely necessary. But timid practitioners, not daring to resist these attacks, will commit great faults, and deliver up to death the mothers and infants, which they could have preserved, as might appear from recent examples, if the able men, who compose the Society of Medicine, do not admit and establish the principle of the necessity of this operation. May the reflections, that I am going to lay before the Society, enlighten it upon the subject of its true glory and the interests of humanity, in defence of which its lucubrations and talents are employed!

No one can at this period be ignorant of the advantages derivable from the operation, of which I am treating, or of the dangers that appear inseparably connected with it. More than a hundred and fifty observations, collected since the time of Rousset, no longer permit us to doubt of its uses, or dangers; to detract from the former, or exaggerate the

latter. The dangers, attending this operation, ought not to appear greater at this period than those, which would result from its prohibition, except in the eyes of the ignorant, or prejudiced. The well informed practitioner will find real advantages in it, even in those cases that others would adduce with the view of causing it to be rejected. The operation has not always been crowned with success; in most cases, it must be confessed, however distressing this truth may be, that the mother has not recovered. But in these very cases, what would have been her fate, if the operation had not been performed? Would her death, which in that case was inevitable, have been more easy, or less cruel? And what would have been the lot of the child, which is constantly saved by this operation, when practised in time, that is, before its death? Both parent and offspring would invariably have fallen victims: for by what other means could nature, or art have succoured them? Can the mother resist for any long time the painful and unavailing efforts, made for the expulsion of the infant? And can the infant support these with less danger? How often has the child been destroyed in a less

painful struggle and under efforts, less violent than those, which are fruitlessly exerted to overcome the obstacles, requiring the cesarean operation? Its death then is certain and that of the woman not less so (2): The testimony of accoucheurs is unanimous upon this point. In vain do some men, doubtless, unacquainted with the art, maintain the contrary; in vain do they quote some instances to disprove this assertion, to shew that the pains of labour will cease sooner, or later, in the females under consideration, that nature will employ other means and other ways to free them from their burden; in vain do they contend, that in some the putrefaction, that takes place in the child after death, and of which the progress is sometimes very rapid, will dispose its head to be moulded to the form of that canal, which at first had denied it a passage; or that its limbs, detached by this destructive agent, will be separately expelled; that in others the inflamed uterus will ulcerate and transmit the infant, either entire, or in pieces, by means of abscesses, as has been remarked in the sequel of extrauterine conceptions and, perhaps, in some of those cases, where

(2) See the *Note* placed at the end of these Researches.

the faulty conformation of the pelvis renders the cesarean operation necessary. But what can a few examples avail against some thousands of others, which writers have not deigned to collect, or have been interested in consigning to oblivion, and which would have evinced the uncertainty of such resources and the folly of depending upon these extraordinary efforts, so destructive in themselves! It is not upon exceptions, upon isolated facts, that Medicine founds its precepts, but upon what observation shews to be the most constantly occurring.

In teaching us, that nothing ought to be expected from these efforts in cases, where delivery by the natural passage is impossible, observation likewise informs us, that in many of these cases art offers no other resource than the cesarean operation and that all the means, which practitioners have wished to substitute in its place, have been attended with equal inconveniences, without affording the same advantages.

The necessity of this operation is no longer a problem; it cannot, at the present day, appear doubtful to any person but those, who are interested in combatting it, no matter from what motive. It is as fully established

as the necessity of lithotomy, against which no one will dare to object; because it is on some occasions as impossible to extract a child by the natural passage, as to bring a large stone from the bladder through the channel of the urethra. The cesarean operation has this peculiarity, that it is always urgent, whilst the operation for the stone is scarcely ever so; that the least delay may render it useless to the child and more dangerous to the mother, whilst the other may, perhaps, be deferred without any material inconveniences.

To make this principle generally known, and to force even the opponents of the cesarean operation to admit it as well as the numerous class of persons, who have not devoted much time to the study of our art, it is necessary to prove, in the first place, the existence of cases, wherein delivery by the natural passage is impossible, and afterwards the insufficiency of all the other means for accomplishing it. This is a very extensive task; it ought to form the subject of several long memoirs, for which we have already collected a great quantity of materials: Time alone has been wanting to arrange them properly, and submit them to the judgment of the learned men, who culti-

vate Medicine, and especially that branch of it, more immediately interested in the subject of these memoirs.

The authors, who have written upon the cesarean operation, since the time of Rousset to the present day, have supposed it to be necessary: 1st. in the case of extrauterine gestation; 2dly. where the fœtus has escaped entirely into the cavity of the abdomen, on account of a rupture of the uterus; 3dly. in the case of a hysterocele, or hernia of the uterus, similar to that described by Sennert; 4thly. where tumours, bridles, cicatrices, adhesions, or other affections of the soft parts, included in the pelvis, obstruct this bony canal, the neck of the womb, or the vagina. Lastly, when the pelvis is in itself so far defective, that there no longer exists, betwixt its dimensions and those of the head of the fœtus, the relation necessary to delivery (1).

First Case. The existence of an extrauterine conception, of any kind whatever, cannot be admitted, without acknowledging the absolute impossibility of delivery by the natural passage, the infant being alive and entire: No truth has less need of proofs.

(1) See Second Letter to Simmons, p. 160—174. T.

But the necessity of the cesarean operation will not appear to be an inevitable consequence of this principle. In order to admit the necessity of this operation, it ought to be demonstrated, that there is more advantage in performing it, or less risk incurred by the woman, than in leaving her and her child to the efforts of nature, as has been usually done to this very time. The consideration of this point will make the subject of one of the memoirs announced above.

Second Case. The impossibility of bringing a fœtus through the womb, in order to extract it by the natural passage, when it has escaped entirely into the cavity of the abdomen in consequence of a rupture of this viscus, is as fully demonstrated as that of delivering the woman, in any other manner than by the cesarean operation, of a child that has been developped in one of the ovaries, or fallopian trumpets: And this operation is much more clearly indicated in this case, because the time of performing it is better known; because it cannot be attended with such inconveniences here, as in the case of extrauterine gestation, and because with the almost general assent of authors it has already been attended with success.

Third Case. If the instances of inguinal and femoral herniæ of the uterus be rare, a single case is sufficient to establish the possibility of them, whatever difficulty may be experienced in explaining their mechanism. The fact, related by Sennert, and that mentioned by Ruisch, are well known. But these cases do not appear to be of the same species: In that of Sennert, as the impregnated womb could not be reduced in the ninth month of gestation, the cesarean operation was of necessity had recourse to: In that of Ruisch, a midwife turned the child and extracted it by the natural passage. This last case bears a perfect resemblance to what we have several times observed in consequence of great obliquities of the womb, taking place anteriorly in women, who had a considerable opening in the linea alba and in whom this viscus was covered and supported by the common integuments only; whereas we must admit that of Sennert to have been a true inguinal hysterocele; an instance of which was presented to the School of Medicine, in the month of Pluviose of the 4th year of the Republic, by our colleague Lallement, chief surgeon of the Salpêtrière. The womb had passed completely through the

right inguinal ring, and formed a tumour in the fold of the groin and the top of the thigh; it was sound, and nearly of the natural size. On inspection of the part every one was forced to acknowledge, that the delivery of this woman would have been impossible, by any other means than the cesarean operation, if she had been impregnated during the existence of this hernia; which was of long standing and irreducible, notwithstanding the uterus was empty and of small size. Here then are several cases, wherein the necessity of this operation is founded on the physical impossibility of the expulsion of the infant by the natural passage, and on the insufficiency of all other means of accomplishing delivery. Which of the known methods can become applicable in these cases? Is it by means of the forceps, of crotchets, or of the section of the symphysis pubis, that any one will propose to effect the delivery? It is evident, that none of these resources will avail. The limits of the art do not appear to be equally circumscribed in those cases, where the obstacle to delivery proceeds from male-conformation of the pelvis, or from some unnatural affections of the soft parts, included in this bony canal. On the one hand, it has

been believed, that the fœtus might be prevented from attaining a large size, by limiting its increase during pregnancy, as its bulk may be diminished in the time of labour; and on the other hand, it has been supposed to be as easy to enlarge the pelvis of the woman, as to make an incision in the neck of the uterus, when obstructed, hard and scirrhous; as to cut through the bridles and cicatrices, contracting the vagina; as to destroy the adhesions of the sides of this canal and dilate it; as to remove tumours, affecting its parietes, or seated in the cellular texture, which envelops it and connects it with the surrounding parts. We shall only take a cursory view of those affections of the soft parts, which appear capable of opposing great obstacles to delivery, in order that we may afterwards pay more attention to the faulty conformation of the pelvis, which seems to belong more to our subject.

Fourth Case. It is evident, that the greater number of the affections of the soft parts does not require the cesarean operation; because the canal, destined for the passage of the child, may be rendered pervious by incisions, or suitable dilatations. But we are not to hope, that we shall be able to destroy with

equal facility and success the hard scirrhous tumours, which have their seat in the cellular texture of the vagina; which are closely connected with the bladder, or rectum, and with the neck of the womb; which have a very broad base; which are contiguous to, or surround the hypogastric vessels and nerves. A practitioner might be deemed equally ignorant and rash, who would undertake to remove entirely, or in part, these kinds of tumours. If authors have perceived only the possibility of meeting with such affections in the time of labour, and have mentioned them only that they might not omit any of the causes, requiring the cesarean operation, we are fully convinced, that there may exist such as leave no other resource than this operation. We could make known an interesting example of this kind, if our colleague Coutouly, who has better pretensions for presenting it to the Society, had it not in view to do this: It is the case of ——— Desnos, in Saint-Denis-Street. This woman, perhaps from her early infancy, or for a long time before her marriage, was troubled with a hard scirrhous tumour, of which the base was intimately connected with both of the ossa pubis, with the lower part of the right os ilium and the

os ischium, and occupied about two thirds of the internal surface of the pelvis. It obstructed the pelvis so much in her first labour, that it appeared on a first examination to be the head of the child. But the error was soon perceived, and the accoucheur called in two of his brethren, viz. Coutouly and me. The cesarean operation would then have appeared to us to be indicated, if we could have divested ourselves of the idea of its dangers, and had not been aware of the little hope of preserving the child after a labour of more than thirty hours. We resolved therefore to try other means. As the hand could be passed through the pelvis, though not without great difficulty, we believed it to be preferable to turn the child and extract it by the feet, having recourse to opening the chest and head, if they could not be brought down without it: But this project could not be executed; it was impossible to introduce the hand for the second foot, or to bring down the trunk by pulling at that foot, which had been with great difficulty laid hold of and disengaged; it was therefore necessary to give up this attempt and to open the head, evacuate the brain, and pull away the bones, an operation which required hard labour for five hours: An ex-

tensive practice had never presented any thing so difficult to us before, or such alarming consequences of delivery without proving mortal. The patient owed her preservation to the indefatigable attention of her accoucheur.

The tumour, having become enlarged and harder during the two whole years, which intervened betwixt this and her second labour, did not allow the same means to be employed again for effecting her delivery. Besides, ——— Desnos would never have consented to the mutilation of this second child, if the accoucheurs should have seen the possibility of it: She knew to what danger the sacrifice of the first infant had exposed her; she was desirous of preserving the one, which she now carried in her womb, and her family had known during two years, that nothing but the cesarean operation could accomplish this. She submitted to it and only enjoyed the happiness of being a mother during five days, the operation only proving successful for the infant, which was healthy and larger than the common size.

The tumour was found, on opening the body, to be *three* inches *five* lines high; *two* inches ten *lines* thick, in the direction from

pubes to sacrum, and *three* inches *three* lines from one side of the pelvis to the other. The pelvis was *three* inches *three* lines in diameter, from the symphysis pubis to the os sacrum, and *four* inches *seven* lines transversely. Consequently one of the dimensions of this pelvis exceeded that of the scirrhous mass by *five* lines only, and the other by *one* inch and *four* lines. This tumour being very hard, like all of the same nature, the pelvis of Desnos, considered relatively to delivery, will appear to have been infinitely more contracted than the generality of those, of which the faulty conformation has seemed to require the cesarean operation.

Fifth Case. A knowledge of the excess of the diameters of the head of the fœtus over those of the pelvis of the woman is not sufficient, in every case, to satisfy us, that the birth of a living child and at the full time will be impossible by the natural passage: To judge with certainty concerning this matter, we ought to know also the changes, which these dimensions may undergo in the course of the labour. Delivery *per vaginam* would never become impossible, if the defective pelvis could constantly be enlarged to the necessary extent, or if the head

of the fœtus could be so far compressed, that its diameters should be smaller than those of this bony canal; or if this relation could be constantly obtained by the enlargement of the pelvis and the diminution of the head taken jointly. In order to decide whether delivery, in the case under consideration, be physically impossible, it is necessary to know, 1st. what is the relation, existing between the dimensions of the distorted pelvis and those of the fetal head; 2dly. how much the last may be diminished by the pains of labour, and how far the first may be augmented, which cannot be determined with exactness. Some data, however, well established by observation, will be found sufficient for our purpose, and we cannot err in taking them as rules.

If women labour for the most part without very great difficulty, it is because the dimensions of the pelvis exceed, in some degree, those of the head of the child; because the head experiences but little friction in its passage through this canal, and because the soft parts yield easily to the agents, which tend to dilate them. This proportion not taking place in all women, they cannot all enjoy the advan-

tages of the majority. In some the bulk of the fetal head is greater than usual and exceeds the natural dimensions of the pelvis; in others this bony canal has not the dimensions, necessary for the passage of a head of the ordinary size; and in all these delivery is impossible, unless the dimensions of the pelvis be increased, or those of the head diminished, till the relation, mentioned above, takes place.

It is sufficiently proved, that the dimensions of the pelvis cannot be much augmented without the destruction of one, or more, of the symphyses, and the alteration of all of them; in other cases this augmentation is so small, that we may doubt its existence. A separation of more than six lines betwixt the ossa pubis (which scarcely ever happens) is requisite to add one line to the diameter of the superior aperture, taken from the top of the symphysis pubis to the sacro-vertebral angle. Repeated experiments have sufficiently shewn this truth, to place it beyond dispute; and equally numerous observations have excited such fears for the consequences of a more extensive separation, that we should never more attempt to obtain it.

Since the pelvis cannot be in the least enlarged in the generality of women, and a line at most in some only, and since a greater enlargement can only be the result of an operation, which is no longer admitted except by a very small number of practitioners, almost all our expectation is to be derived from the reduction of the head of the fœtus: But this reduction, as well as the augmentation of the pelvis, has its limits, beyond which it cannot go without being as fatal to the child as the separation of the symphyses of the pelvis is to the mother. Moreover, although nature should make both these resources contribute to delivery at the same time, she could not establish in all women the relation of dimensions necessary to the end, to which her efforts are directed, and there would still be cases, wherein delivery per vaginam could not be effected.

The reduction of the bulk of the fetal head is effected in two ways: In some infants the cranium only changes its form, becoming elongated from the fore to the hind head, and compressed from one bossa parietalis to the other; it thus gains in one direction, what it loses in another, and whatever may be the extent of these changes, the

cavity, enclosing the brain, is scarcely at all diminished. We have seen several of these children born alive, although they had experienced similar changes in passing through the contracted pelvis of the mother: In some the head presented only *two* inches and *six* or *eight* lines in thickness, whilst it was *five* inches in length from the forehead to the occiput, *six* inches, or *six* inches and a *half*, or even more, from the point of the chin to the posterior extremity of the sagittal suture: In others it had lost some lines less in the first direction, and had gained a little less in its length: In all, having regained its natural form on the day after the birth, it measured more than *three* inches and a *quarter* in thickness and less than *four* inches and a *quarter* in length from before to behind. Will it be proper to conclude from these rare and uncommon observations, that these same heads would have undergone greater changes, with as few inconveniences, if they had had to pass through a pelvis more deformed and more contracted? Surely, no one will draw such a conclusion from them.

If under our own eyes the heads of some children, after a painful and long labour, have been able to pass through a pelvis, so

contracted as only to measure *two* inches and a *half* in the small diameter of the superior aperture, and those of several other children, through a pelvis measuring *two* inches and *three quarters* ; in a much greater number of instances the head has not been able to mould itself to the canal of a pelvis, which was leſs contracted, and in none has it passed through a pelvis, of which the small diameter was under *two* inches and a *half*, though the pains have been equally strong and have continued for a still longer time. Hence it appears that the changes, which the head of the fœtus can experience, depend on certain conditions, that are very rarely met with at the full term of uterogestation. In the small number of children, which we have seen born under the circumstances mentioned above, the head was soft and flexible ; ossification was little advanced ; the sutures were lax and the fontanelles broad. It cannot undergo the same change of form, when it is of the solidity, usual at the end of the ninth month. If it be reduced some lines in its thickness, this is owing to one of the parietal bones passing over the other; and this reduction cannot go very far without detaching the pericranium and dura mater from the bones.

At the same time, that the parietal bones ride over one another by their upper margin, they also advance over the occipital and frontal bones, which appear to be sunk beneath them, so that the cranium is diminished both in its length and thickness at the same time. If the diameter of the skull still exceed that of the pelvis, as the bones cannot be forced to project further over one another, one of the parietal bones is fractured and depressed, or, which is infinitely more uncommon, it is depressed without being fractured; and then new disorders are added to those of the obstruction of the brain and the detachment of the pericranium and dura mater, and the child dies in the womb of its mother. All these derangements have been detected by an anatomical inspection of the children.

The following considerations are much more important and conclusive. That the head of the fœtus may be moulded in this manner to the contracted canal, through which it has to pass, it must enter and advance like a wedge; which supposes this canal to possess a width, that is not met with in all deformed pelves. Hitherto no well authenticated observation has demonstrated the possibility of delivery, where the pelvis

measures less than *two* inches and a *half* in its small diameter, and thousands of facts, if one had time to collect them, would attest that it takes place only very rarely in women, whose pelves are only *two* inches and a *half*, or even *two* inches and *three quarters* in the diameter specified above: Those, who have preserved their children in this degree of faulty conformation, being indebted for it to the imperfect state of their heads, to the flexibility of the bones, and the laxity of the sutures, as we have already remarked. Whence reasonable men will conclude with us, that the birth of a child at the full time, of the usual size and alive, is generally impossible, when the diameter of the pelvis is only *two* inches and a *half*. Besides, as a woman, who has once been delivered under such circumstances, because the head of the fœtus was soft and flexible, may not again enjoy this advantage, whatever be the number of her labours; so another woman, after several very laborious deliveries, in which it has been found necessary to mutilate the children, may afterwards labour once or twice, with less pain and more advantage.

The extent of the changes, which the cranium of the fœtus can undergo both in its

form and dimensions, being sufficiently known from these general *data*, and likewise that of the augmentation, which the circle of the deformed pelvis can admit; it is impossible not to allow, that there are cases, wherein the delivery cannot be accomplished, notwithstanding these advantages, which are often more specious than solid; since there are some, in which the dimensions of the head much exceed those of the pelvis of the woman, whatever be the increase produced in the latter, or the diminution produced in the former. If a proof of this assertion be required, we shall not need to look for it in the greatest degrees of deformity of the pelvis; for a moderately deformed pelvis will afford an ample proof. If it be admitted, that the head of a child at the full time, and of the usual size and firmness, cannot pass through a pelvis of *two* inches and a *half*, is it not more than sufficiently proved, that the head will meet with much greater obstacles from one, which is only *two* inches, and that every exception then to the general law will be impossible: for, whatever be the state of imperfection of the bones and sutures of the cranium, the head cannot enter into a pelvis of these dimensions, be moulded to it and

pass through it. To reject this truth, or to be ignorant of it, is to suppose that there does not exist any of these very distorted and contracted pelves and that those, which are preserved in some collections, have been altered or deformed, to their liking, by practitioners, after their removal from the bodies to which they belonged; a supposition so extraordinary, that it would be an offence against reason to take up any time in combatting it?

From the largest and most regularly formed pelvis to the narrowest and most distorted we observe a variety well worthy of the attention of the philosopher. There are some deformed pelves in our possession, that measure from $3\frac{1}{4}$ inches to only 14 or 15 lines and even less, in their small diameter: In the pelvis of a very distorted female skeleton, the distance betwixt the bottom of the right acetabulum and the sacro-vertebral angle is only three or four lines. Similar ones, undoubtedly, are preserved also in the cabinets of some of our brethren: The rich Museum of Dr. Hunter contained several from $6\frac{1}{2}$, or 7 lines, to 21 lines in diameter. We recollect also, that the celebrated Camper informed the secretary of the Academy of Sur-

gery in 1778, that the cesarean operation had been performed upon a woman, whose pelvis, on opening her body, measured only a Holland inch (about eleven French lines) in diameter. If the history of the cesarean operation and that of the section of the symphysis pubis do not present any examples of pelves so deformed and contracted amongst us, we find several, where the small diameter of the superior aperture was only one inch and seven or eight lines, two inches, and two inches and a half.

Hitherto we have only considered the faulty conformation of the *superior* strait, or aperture of the pelvis: But the *inferior* strait may present equal irregularities in its circumference and dimensions, although these occur much less frequently. If the bad conformation of one aperture can oppose very great obstacles to delivery, still greater must necessarily exist, when the pelvis is ill formed in every part at the same time (1).

If it be certain from these reflections, which are founded on actual observation,

(1) This observation will be confirmed and illustrated in a very striking manner by the case of Ellen Gyte, given in the Appendix. T.

that no infant, at the full time and of the usual size, can be born naturally, when the small diameter of the pelvis is not equal to two inches and a half, how many cases must appear to belong to the department of Operative Midwifery? And how much more numerous will they appear, if we recollect, that there are only few women, who can be delivered without assistance, although this diameter be two inches and a half, or three inches within a quarter, and that there are scarcely any instances of this in authors? Solayres mentioned a woman in his lectures, whose pelvis he estimated to be only two inches and a half in its small diameter, and who was very fortunately delivered of her first child. We have known a woman, in whom the same diameter appeared to have only this dimension, and a second, in whom it was two inches and eight or nine lines. —— Rouillé, who died of the consequences of the section of the symphysis pubis in 1785, was delivered once out of four times with the same advantage, although her pelvis, in the small diameter, measured only two inches six lines. Our colleague Chaussier informed the Academy of Surgery, by letter in 1778, that a woman at Dijon, whose pelvis mea-

sured only two inches nine lines from pubes to sacrum, had born three children alive out of six. Several other women, equally distorted, doubtleſs, may have had the same good fortune; but the number will appear very small, when compared with that of the women, whose children it has been necessary to mutilate, in order to accomplish their delivery, where the pelvis has been contracted in the same degree. —— Rouillé, mentioned above, has only been able to bring one alive into the world out of four; —— Dubelloy, upon whom the section of the symphysis pubis was also performed, only one out of ten; —— Huguet, who underwent the same operation, one out of three; and another woman, operated upon at Wurtzbourg by Siebold, lost seven, although her pelvis was two inches nine lines in diameter: Three children had been mutilated also in the woman, upon whom Vermond performed the cesarean operation with success in 1767; another female, operated upon by Millot in 1774, has only been able to preserve one out of six since that operation: The woman, who is the subject of M. Bacqua's observation, had to regret the loss of three children, when she submitted to the cesarean opera-

tion; and many others of these tender victims had been treated in the same way, with the view of preserving the lives of their mothers, before practitioners dared to practise the cesarean section, with the intention of saving them also.

Although it be fully demonstrated, that a woman cannot be delivered naturally and of a living child, when the small diameter is not more than two inches and a half, the absolute impossibility of delivery will not appear to be an inevitable consequence, since there still remains some hope of effecting it, either by turning the child, or extracting it with instruments. But well informed practitioners, who will examine these different methods, will soon perceive their difficulties, dangers and insufficiency even in the majority of cases under consideration. A single living infant has not been extracted through a pelvis of only two inches and a half in diameter, either by bringing it by the feet, or by means of the forceps, although some accoucheurs contend that they have met with success in this way. In pursuing the first of these two methods, the practitioner has often been obliged to crush the skull of the fœtus, to open it, to pull it away in pieces with the

crotchet, or he has torn away the trunk and separated it from the head, which has remained above the superior aperture and has occasioned much greater difficulties in the extraction. The application of the forceps cannot procure any greater advantages. If it be possible to lay hold of the head by means of this instrument, we cannot extract it, and after many efforts, equally dangerous and unavailing, we are obliged to have recourse to other means. Since there is so much danger, both to the mother and child, in attempting to deliver by either of these methods, when the diameter of the pelvis is equal to two inches and a half, it would shew ignorance and want of skill to have recourse to them, when the diameter is still smaller: The crotchet alone can then appear to be deserving of recommendation, and it ceases to be so, in its turn, when the deformity is in the greatest degrees. In fact, regarding as nothing the loss of the child, which is sacrificed in the most cruel and most painful manner, how much have we not to fear for the woman, from the use of this instrument, introduced very high, without guide, and, as it were, by chance? Can we be certain of fixing the point of it con-

stantly in the head of the child, and, when it slips, of keeping it from injuring those parts of the mother, that line the pelvis and envelop the head so closely? Can we be certain, that by mutilating the infant we shall save the woman? It would not be difficult to prove, that many more women have died in consequence of the use of the crotchet than of the cesarean operation, if practitioners had formed a collection of all those cases, wherein they have delivered, or attempted to deliver, by means of crotchets, as has been done with respect to the women, who have undergone the cesarean section. We have constantly observed contusions and lacerations of the womb, bladder, vagina, rectum and other neighbouring parts, on opening the bodies of those females, who have died after such a delivery, even where the case appeared more favourable to the application of the crotchet, since the pelvis was more than two inches in diameter. Very few women, doubtless, would consent to have their children mutilated, if they knew all the dangers, to which they would themselves be exposed by this painful sacrifice.

If even the thought of using destructive instruments upon a living child, in order to

preserve the mother, be afflicting to the professional man, who is acquainted with all the dignity of his office, how much must it distress him to repeat every year the same sacrifice in favour of the same woman and sometimes in favour of several women, when he practises in a large city, like Paris, and has acquired so much celebrity as to be called upon in the most difficult cases ? If the last resources, which we have to examine here, were as destructive to the mother as crotchets are to the child, marriage ought to be prohibited by wise laws to women, so far deformed as to be unable to bear a living child. These laws would spare the virtuous man the pain of finding himself constrained sometimes to commit a sort of crime, greater it is true against nature than society, solely because he exercises a beneficent and consoling profession. So far from prohibiting the cesarean operation, other laws should oblige us to perform it, if we can demonstrate, that this operation is the only one, which can preserve the child without being essentially fatal to the mother.

The death of the child is the only circumstance, which can authorise the use of the crotchet and other instruments of this kind:

But how can any certainty of this be acquired, whilst it remains in the womb and the finger can scarcely touch a single point of its surface, since it is sometimes difficult to obtain this certainty in a new born child, though exposed to our view and capable of being examined every where by the touch? When its death is recent and putrefaction has not taken place, we should always be afraid of being deceived. How often, after ſtrong appearances of the death of the child, have we heard its moans, when just torn from the womb of the mother by a barbarous practice, at most excusable only in the first ages of the art? How often have we seen the scattered and palpitating limbs accuse this then destructive art, or the practiser of it, of a wicked attempt, which is so much the more shocking as none of the laws, that protect innocence, can puniſh it? Admitting, that it is easy to acquire a certainty of the death of the fœtus and consequently, that the instruments, of which we are treating, will have to act only upon a dead body, it is painful to recollect, that we may still meet with cases, wherein it will be necessary to have recourse to other means, notwithstanding this perfect conviction; those, for example, where the diameter

of the pelvis does not exceed six, twelve, eighteen, or even twenty lines: for it is easily proved, that crotchets are then inapplicable. Will it be proposed in these cases, as has been done in others, which are less difficult, to restrain the growth of the fœtus by making the woman observe a strict regimen during her pregnancy; by subjecting her to a rigorous diet and only allowing her a quantity of food, barely sufficient for the support of her life? Or will it be proposed to bring on premature labour? The first of these proposals cannot possibly meet with a favourable reception from well informed persons; besides, few of those women, who are most commonly affected with these extensive degrees of distortion, which seem to preclude every other means of delivery except the cesarean operation, would be able to submit to a regimen of this kind, being almost all of them in indigence and obliged to work for subsistence. Moreover, what a number of inſtances might be opposed to the opinion of those, who believe that the growth of the fœtus, which is always independent of the manner of living of the mother and of the quantity as well as quality of her food, may be limited by these means!

The idea of exciting labour before the usual time will meet, perhaps, with more advocates, although it may not be more fortunate in its results. Some accoucheurs will receive it favourably, because it will appear to them to be the consequence of observation. But with a little reflection, they will easily perceive the slight identity, that there is betwixt the cases, of which we are treating, and those, where a premature delivery has fulfilled the wishes of a family, long in expectation of a living child; a circumstance not to have been expected from a delivery at the full period of utero-gestation. Because many women have been by chance delivered once, at the end of eight or even of seven months, of a living child, who could not be delivered in their preceding labours, at the full time, without using extraordinary means as the forceps or crotchet for example, will it follow that females, whose pelvis is very much contracted, will be equally fortunate? A woman, who had experienced the misfortune of having her first three children mutilated, rejoiced a while over a fall, which had induced premature labour in the eighth month of her fourth pregnancy, hoping that her child would be preserved; but her labour

was long and the child was dead born. Another woman, who had undergone the cesarean operation with success in 1774, laboured several times at the term of seven months and always in a most laborious way, although her children were very small and weighed only two pounds and a half: And none of them lived more than 36 or 48 hours(1). If this last woman has constantly been obliged to suffer very strong pains, during 15 or 16 hours, for the expulsion of so small a child through a pelvis two inches and a half in diameter; if similar pains have proved unavailing in the former woman, although the diameter of her pelvis was three lines more, what can be expected from a longer labour in cases, where the pelves are only one inch, one inch and a half, or even two inches in diameter? We think it useless to multiply facts of this kind, in order to prove that under many circumstances the delivery would not be more certain by the natural passage in the eighth, or even in the seventh month than at the full time. Will any one induce labour at a still earlier period?

(1) This woman has also had two others at the full time, which it was necessary to mutilate.

As well might we wait for the maturity of the child, to mutilate it then, if the pelvis be sufficiently large to permit this to be done. If our laws punish with death the mother, who destroys her child and the person also, who excites labour by violent means, with the intention of concealing a more advanced pregnancy from the knowledge of the public, will they allow these criminal resources, with the view of superseding the necessity of the cesarean operation? Submitting these reflections to the judgment of enlightened moralists and legislators we conclude, that there are cases, where nothing can be hoped for from delivery before the time, since there are some, where the pelvis measures only six lines and a half, or seven lines in diameter (1).

(1) In my *Second Letter to Simmons*, page 970, I have shewn, that the necessity of the Cesarean Operation may in some, but not in all, cases be superseded by inducing premature labour: And in p. 449, &c. I have considered the propriety of this practice, in the inferior degrees of deformity of the pelvis, requiring the use of the crotchet, together with the safety of it to the parent and the advantages, derivable from it to the offspring. To that work, therefore, I beg leave to refer the reader and shall in this place confine myself to a few observations on a Paper,

The section of the symphysis pubis, it was thought, would banish for ever the use of crotchets, of perforators and other deſtructive inſtruments, as well as premature delivery and

since published by Mr. John Barlow of Bolton, in the 8th Volume of *Medical Facts and Observations*.

In this Paper the ingenious Author has favoured the world with an account of the result of his extensive practice in inducing premature labour, in cases of distorted pelvis: From which it appears, that he has had recourse to this method of delivery sixteen times in five women, all of whom had been previously delivered once, or oftener, by the crotchet, and that premature labour occurred spontaneously once in two of this number. All the women recovered, a circumstance, which adds a further confirmation to the opinion, that the life of the parent is exposed to very little danger in this way. Of the children, thus brought into the world, six were dead and twelve were born alive; of which some died soon after birth; one lived ten months and five were living at the time this account was published. The number of lives, thus preserved, affords a satisfactory view of the success, to be expected from this mode of delivery to the infant. It must be acknowledged, however, that the proportion of these children, that were reared, is uncommonly great; when we consider, that Mr. Barlow's "method consists in exciting premature labour *early* in the seventh month of pregnancy:" For it generally happens, that children, born in the beginning of the 8th month independently of any external violence, do not long survive their birth.

the cesarean operation. This bold project, worthy of the 18th century, if it had been more fortunate in its effects, presented with the eclat of a discovery important to huma-

The success of Mr. Barlow has rendered him very sanguine: He says, "I will venture further to advance, that even the *use of the crotchet* may be superseded by the method, which I am about to describe, and that the formidable obstetrical apparatus of knives, hooks and perforators may be happily banished in future from the Surgery"—To this assertion I must refuse my assent. To say nothing of the necessity of using these destructive instruments in some cases of preternatural presentation and monstrous conformation of the fœtus (see *Second Letter to Simmons* p. 252 and 270 &c.) the practice I am considering, though it may render their use less frequently necessary, cannot entirely supersede them. The propriety of inducing premature labour in any deformed woman can rarely, if ever, be determined upon, before the crotchet has been found indispensably necessary and actually employed in a previous labour. Indeed, unless the contraction of the tube, or canal, of the pelvis be very considerable and pretty accurately ascertained, it will scarcely be justifiable in any case to have recourse to this practice in all the subsequent pregnancies, until the woman has been delivered a second, or third time by the crotchet. For it has happened in a very great number of instances, that a woman, who has been delivered of her first child by the perforator and crotchet, has been afterwards delivered of one, or more living children at the full time. This observation is made not to discountenance

nity, could not fail to please and to be generally well received by practitioners as well as the public. Whilst its partisans were multiplying throughout Europe without examining it, some men united their efforts to shew that the operation ought to be submitted to the test of experiment, before it was adopted; others, equally few in number, far from partaking of the enthusiasm, which this discovery excited, thought it their duty to moderate this by opposing the operation and attributing to it certain inconveniences, which observation had not then pointed out, it is true; but which have been but too strongly confirmed since. Sigault, who at first thought, that it would give to the pelvis, in every case of bad conformation, the space necessary for the free passage of the child and invariably supersede

the inducing of premature labour, but to prevent the abuse of it. Fully sensible of the impropriety of arguing against the employment of an useful remedy merely on account of its being liable to be abused, I must contend, that this method of delivery should not be adopted on account of distortion of the pelvis, until the accoucheur is perfectly satisfied with respect to the necessity of it; otherwise, though undoubtedly applicable to beneficial purposes, it may become upon the whole injurious to the interests of individuals and the community. T.

the cesarean operation, further instructed by some cases, of which the consequences had been less fortunate than those which occurred in the case of Souchot, restricted it to to those instances, wherein the small diameter of the pelvis was at least two inches and a half. If he has not made this acknowledgment public, it must undoubtedly be attributed to his premature death. We can affirm, that such was his opinion before his death, having been called by him and one of his brethren, a physician at Paris, on the 19th of July 1785, to perform the cesarean operation upon a woman, whose pelvis measured only one inch eleven lines in the small diameter; this friend of truth pronouncing boldly, that the section of the pubes, in this degree of maleconformation, would not be attended with more success than it was in —— Vespres, operated upon on the 15th of November 1778. If the cesarean operation, performed with the full consent of this physician and several of his brethren, were not attended with more advantage to the mother than he hoped for from the section of the symphysis of the pubes, it preserved the child, who is now more than thirteen years of age.

The new operation was practised more frequently at this period, in the space of seven years and a half, than the cesarean section had been in the course of more than twenty-five years; and the general opinion began to change with respect to it. Its advantages and inconveniences could now be calculated from observation; the cases could be determined, wherein it could give to the pelvis an increase of diameter, necessary to the free passage of the child; wherein it could supply the place of some of those methods of delivery, that were previously known; and finally those too numerous instances, which left no other resource than the cesarean operation.

Of the thirty-four women, that had been operated upon, about the middle of the year 1787 (no case has since come to our knowledge), in France and other nations, and concerning which we have been able to collect some details (1), we observe that twenty-

(1) We do not include in this number the woman in the neighbourhood of Hesdin, upon whom Bonnard, surgeon of the district, performed the cesarean operation, on the 12th of February 1778, since he was not able to complete the section of the pubes, on account of the *ossification of the symphysis*, nor her, who underwent

three have recovered and eleven have died; that eleven infants only have been born alive and twenty-three dead (2). We shall acknowledge, in order to be correct, that several of these last appeared to be dead before the operation.—Amongst the twenty-three women preserved, six had laboured naturally before; eight have laboured naturally since, and perhaps a greater number even; but this we have not been able to prove, not having had an opportunity of informing ourselves of what has occurred to these same women within more than fifteen years. In this number of thirty-four there is not one woman, whose pelvis exhibits the greatest

this operation in the hospital of Lectours, on the 8th of July 1788, after every other method, even to the cesarean section, had been tried: because we think that these two facts belong rather to the history of the latter than the former operation.

(2) I have collected an account of all the cases of the section of the symphysis pubis, which I could find recorded, and have disposed them in two tables. The successful ones are thirty in number, and the unsuccessful amount to fourteen, as far as the parent is concerned. Twenty of the children were born dead, or died immediately after birth; fifteen were preserved, and of the remaining seven I have not been able to meet with any account. See *Second Letter to Simmons*, pag. 94. T.

deformity known. It has been publicly stated, that the pelvis of Dubelloy, upon whom Alph. Leroy operated, was only 21 lines in diameter, as well as that of another woman in the environs of Saint-Pol-de-Lion: But the six labours, which had preceded the operation in the former, and the three, that have since taken place, although none of the children have been born alive, sufficiently declare, that her pelvis, though ill formed, was not so much contracted as had been imagined, without bringing any other proofs; and the two very common and very fortunate deliveries, that have occurred to the latter female, leave no doubt with respect to the proper conformation of her pelvis. The pelvis of Vespres, upon whom Sigault operated in November 1778, and that of another woman, who underwent the operation in the great Hospital of Lyon, in December 1781, are the most defective of any, in which the section of the symphysis pubis has been practised, the diameter of the latter being only one inch seven lines, and of the former one inch ten lines. In the other patients the pelvis was much less contracted and we may assert, without fear of being contradicted by facts, although all their pelves should here-

after be procured and examined, that the pubes has not been successfully cut in any of those, which were less than two inches and a half, or exactly two inches and a half, in the small diameter of the superior aperture.

If all the women have not died of the consequences of the Sigaultian operation, it is to be attributed to these circumstances, that the pelvis was larger than it had been estimated, and that the separation of the bones was not so considerable as it was imagined; which may be easily proved. Vespres died on the fifth day after the operation: The woman at Lyon fifty-two hours after: A third, operated upon by Demathiis, on the ninth day: And another patient of Alph. Leroy about the end of the eighth. A surgeon at Paimpol, in ci-devant Britanny, saw a woman die, on the 11th of February 1783, an hour and a half after the operation, owing to the bones of the pubes being separated exactly two inches and a half(1). A woman at Arras died on the fifth day after the operation; one at Mons on the sixth day, in con-

(1) The pelvis of this woman and those of the two women, operated upon by Demathiis and Leroy, constitute a part of my collection. The small diameter of the two last measures exactly two inches and a half.

sequence of a separation of the bones to the breadth of four fingers; one at Dusseldorff on the eleventh; one at Gênes on the sixteenth; that at Spire on the eighth; one at Naples, during the operation (2); and another within twenty-four hours (3). The smallest of these pelves, which were divided at the symphysis pubis with so little advantage, was two inches five lines in its small diameter (4). The others were two inches and a half, two inches ten lines, and even three inches: The greatest separation of the bones of the pubis was two inches and seven lines.

If all these women have died of the consequences of the operation and of the great separation of the bones of the pubes, which cannot be doubted after the report of the opening of the body of those who were examined, who can allow with some persons,

(2) I have no further knowledge of this case than what is said by Lauverjat: Traitê sur l' opération césarienne, pag. 252.

(3) The practitioner, when he communicated this fact to me, desired me not to mention his name.

(4) The pelvis of Vespres and the woman at Lyon are excepted from this number.

who still pretend to believe it, that the separation of the ossa pubis has been carried as far as three inches, without the least inconvenience, upon other women, whose pelves were much more contracted? If it has been necessary in the women, just mentioned, to employ a great deal of force in extracting the child, after it was turned, and to have recourse to the forceps and even the crotchet to disengage others, who can be persuaded that a separation of two inches and a half, or of three inches even, has opened an easy passage through pelves more contracted than those of the women, of whom we are speaking? If the majority of the children of those women have died during the strong efforts, necessary for their extraction after the operation, can it be granted, that other children, more remarkable for their bulk, have passed freely and without danger after the section of the symphysis pubis?

We know very well, at this time, what may be hoped for from the section of the pubes, and what may be dreaded from it, because we know to a single line, how much a given separation of the ossa pubis can add to each diameter of the superior aperture, and how far it will destroy the integrity of

the sacro-iliac symphyses; the advantages, resulting from the operation to the fœtus, and the dangers to the mother depending on the degree of increase of the diameters. We are no longer ignorant, that a separation of the ossa pubis to the extent of two inches and a half, for example, in adding more to the diameter, which was at first only two inches considered from pubes to sacrum, than to that which was three inches, became also more dangerous, in as far as it occasioned greater mischiefs in the sacro-iliac symphyses; and that the pelvis, which receives the greatest increase, does not thence become more proper for the free transmission of the child than one, which receives a slighter augmentation. What we have published upon this subject may be seen in the second and third editions of our work, entitled *L'Art des Accouchemens.*

It is then demonstrated by actual observation, that the section of the symphysis pubis, far from procuring to the most defective pelvis the width, necessary to delivery, does not even give it to one, which is only moderately contracted and is naturally two inches and a half in diameter: It is also proved, that this new operation is attended with great incon-

veniences both to the mother and infant, that it frequently presents great difficulties in the performance (1); that it has only proved successful in a small number of women and that this success is to be imputed to circumstances, which have induced impartial men to doubt, whether the operation was necessary in those cases. Nothing confirms more these truths than the reserve, which the most zealous advocates of this new operation at present use in practising it, although opportunities are not less frequently occurring than formerly. After it began to be practised, the first eight years furnished more than thirty cases; but since 1787 none has come to the knowledge of practitioners. If the success of an operation, which has for its object to save both the mother and child, be allowed

(1) It is well known, that in several cases it has been necessary to have recourse to a saw for the division of the bones of the pubes; that in other cases the surgeon has cut down upon one of these bones, at the side of the symphysis; and that Bonnard, surgeon at Hesdin, unable to complete the section of the pubes, was obliged to perform the cesarean operation. A collection of the observations, which we have only sketched here, would be very interesting: It might rank with those, which the end of the 18th century has produced of various kinds.

from the preservation of one of these individuals, the cesarean operation has had much more success than the section of the pubes in an equal number of women ; the life of the child, always endangered after the latter, being constantly preserved by the former operation, and the life of the mother being exposed to no more danger by one than by the other.

If Paré, Guillemeau and a very small number of others have believed for a moment, that the cesarean operation is necessarily fatal ; the practitioners of the 19th century will only view it, as we do, as one of the greatest operations of surgery, which ought to be performed, whenever it becomes necessary, because the performance of it is attended with still less danger than the omission of it and because no other can be employed in its stead. If those men, whose writings still command our veneration, have thought themselves right in regarding as fabulous the histories of cures, published in their time, or in considering those instances of success as *true miracles of nature*, we cannot, at the present day, carry our scepticism so far, without being wanting in good faith, or information, because the facts are

multiplied, and the greater number possesses that authentic character, which Paré and Guillemeau would have wished to meet with in those, alleged by Rousset in favour of his opinion. Those authors, who might have easily satisfied themselves of the truth of some of the facts, related by Rousset, ought to appear extremely culpable in the eyes of the generations, which more immediately succeeded them, and especially Paré, who had the greatest influence over the opinion of his brethren, as well on account of his situation as his uncommon genius and knowledge. They have not formally denied the possibility of performing the cesarean operation with success; they have contented themselves with saying, that it offered too little hope and too much danger to be recommended. Mauriceau went further in asserting that no case existed, in which the fœtus could not be extracted by the natural passage. If Rousset had lived in the time of the last mentioned writer, he might have given him a sufficient answer by calling to his recollection the subject of his 26th observation, in which it is remarked, that the mother and fœtus were both allowed to die, because it was judged impossible to apply the crotchet.

At the present day even, it is by tearing this homicidal instrument from the hands of accoucheurs, that we can hope to make them acknowledge the necessity and utility of such an operation.

It would be superfluous to collect new facts and add them to those, which the Memoir of Simon presents, if we had only to answer the objections, made against the cesarean operation since Paré, by Guillemeau, Marchand and several others; if we had only to prove, that it is not essentially mortal, and that wounds of the uterus heal like those of other parts (1): It would be

(1) Mr. Simmons contends strongly for the mortality of wounds of the uterus in a Letter, inserted in the Medical and Physical Journal for 1799, and yet in the 8th Volume of Medical Facts and Observations he has related a case, which occurred to him two years before he wrote the letter mentioned above, to prove that wounds of the uterus are *not* mortal. — The subject of this case, Ann Calvert, had been tapped by him in April 1797. She applied to him again, on the 21st of July following, to have the operation repeated. Mr. S. informs us, that the fluctuation was now obscure and that suspicions had arisen of her being with child. He ventured, however, to push a trocar into the cavity of the abdomen, midway between the umbilicus and pubes. Instead of water, blood flowed out in a considerable stream to the quantity of about six ounces; the cannula

sufficient to refer to Mr. Simon's Memoir and even to the work of Rousset, which contains some instances of cures of this kind amongst many other observations, that do not merit any degree of confidence. But we are endeavouring to fix the opinion of practi-

being then withdrawn, the hemorrhage ceased. The pain was greater than usual, but not so great as to excite any alarm, and the soreness after was little more than what she had formerly experienced. Mr. Simmons with great reason concluded, that the blood came from the womb, and I think it very probable, that the trocar passed into the placenta. He predicted an unfavourable termination; but the event shewed him to be mistaken. The patient was delivered of a fine healthy girl on the 26th of October following, "having suffered no inconvenience from the last operation;" so that she must have been in the beginning of the sixth month of her pregnancy, when it was performed.

It may be proper to observe here, by way of caution to the young and inexperienced reader, that this case shews 1st. the danger of wounding the abdominal viscera by the trocar, when it is used where the fluctuation is obscure, and 2dly. the propriety or necessity of examining female ascitic patients, or who are supposed to be such, *per vaginam*, previously to performing the operation of paracentesis upon them, especially where the accumulation of fluid is not very large and evident, and where any suspicion of pregnancy is entertained from the age of the patient, the suppression of the catamenia and other symptoms. T.

tioners concerning the advantages of the cesarean operation; the danger, which appears inseparable from and necessarily dependent on it; the cases, which require it; the place, where it ought to be performed; the time most favourable for practising it, and the most suitable after-treatment: And it is only from collecting and comparing a great number of cases, that we can hope to attain this end. In pointing out those, that have occurred since 1750 and are easily collected, we have to regret, that we cannot give an account of all the operations, which may have been unsuccessfully performed and concerning which the operators have remained silent; because these might have had their utility as well as the others. Those, which we announce, amount to the number of sixty-six. More than fifty of them took place on account of faulty conformation of the pelvis; five after a rupture of the uterus, or vagina; one owing to a scirrhous tumour, which obstructed the pelvis; and the remainder, because the child could not be turned and brought away by the feet, on account of its wrong position and the too strong contraction of the uterus. Twenty-four of them have been performed with success to the

mother, and all might have been attended with success to the child, if they had been performed in time. Some of the observations, announced by us, have been published by the practitioners concerned; others have been printed in periodical works; but the greater number has been communicated to the Academy of Surgery, or has been kept in the port-folio of several of its members, who have been waiting for an opportunity of making them known and employing them with advantage for the science.

Independently of these sixty six new facts, five others have been announced to the Academy of Surgery; namely, two by Warrocquier, Surgeon at Lille, who assured the Academy, that a surgeon in the environs of Gand had performed this operation twice in the linea alba with success; and the remaining three by Médérer, Professor of Anatomy and Surgery at Fribourg in Brisgaw, which were performed with complete success. Médérer promised circumstantial details of the cases and these, perhaps, exist in some corner of the Archives of this ci-devant Academy. Colombier, a physician at Paris, after hearing the reading of the observation of Hannequin and Chabrol, which will be

noticed hereafter, assured the ci-devant Royal Society of Medicine, of which he was a member, that the operation had also been performed with success in the presence of his father and Mr. Toutblanc, who were physicians, in 1752 at Sainte-Menehould by Buyret, surgeon of that Commune(1). To these may be added the very extraordinary case of a Negress in Jamaica, who performed the cesarean operation upon herself in 1769 and was completely cured in five weeks by Doctor Morton, at that time a physician at Kingston(2).

TABLE I.

Operations performed with success.

1st. The first of these operations was communicated by CAQUE of Rheims; the woman, who is the subject of it, had had two very laborious deliveries, previously to the cesarean operation, and it was not till after the trunk of the 3d child was pulled away, on the 17th of September 1782, that

(1) See the Memoires of this Society for 1777 or 1778.

(2) See the London Medical Journal Vol. VII for 1786; Journ. de Méd. de Paris, Tome 76.

this operation was performed. The cure was completed on the 14th of January following.

2d. Beaujeu, Surgeon at Martigni near Laon, performed it on the 29th of November 1753, upon a woman, whose pelvis was so strait, that two fingers could not be introduced. She was cured on the 31st day; but the child lived only 5 days.

3d. A Surgeon at Bossand, near Chabais in Saintonge, operated upon a woman, 46 years of age, on the 24th of May 1760; this was her 9th child and the first eight had come into the world naturally. The patient was perfectly recovered and went to church on the 24th day after. Given by Arondeau.

4th. Vermond saved the life of a woman and two children, of which she was pregnant, by operating upon her on the 17th of May 1767. She was at the full time of her fourth pregnancy and her three first children had been mutilated by the crotchet. Russel, Thevenot, Cabani, Lécluse, Hévin and Tronchin visited the patient during the cure, which was complete in 28 days.

5th. A Surgeon at Attichi near Compiègne, after having torn away both the arms of a fœtus, in October 1772, thought

proper to perform the cesarean operation upon the mother, who had born children before: He opened the abdomen and the uterus in a transverse direction on one side. The woman was cured at the end of five weeks.

6th. Millot operated with the greatest success on a woman, named Varin, in 1774, in the presence of several of his brethren. We have since attended this woman in several premature labours; and in one of her pregnancies we extracted the remains of a fœtus through a large ulcer in the parietes of the abdomen and uterus, which had supervened to a fall.

7th. Dufrechou, Surgeon at Symore in Gascony, performed the same operation in 1776 upon a woman, who was cured on the 30th day.

8th. Deleurie operated upon a woman with the same success, on the 9th of August 1778, and the cure was effected at the end of a month. This was her second labour.

9th. Chabrol and Hennequin performed this operation on the wife of an officer at Mézières on the 31st of August 1778; but the cure was not completed till after two months and eight days.

10th. Riolles, Trouard, Delestres &c. operated upon the wife of a tavern-keeper at Dieppe, on the 19th of November 1778, after a labour of five days. She was able to go out after the 40th day.

11th. Warrocquier, Surgeon at Lille, operated on a woman in the presence of nine of his brethren, on the 11th of May 1780, and she was cured on the 45th day.

12th and 13th. Lauverjat performed the same operation with success on two very deformed women; the former, on the 21st of July 1782; the latter, in the end of February 1787. These two women, who were operated upon according to the method of this author (1), were cured at the end of one month.

14th. Favereau, Surgeon at Jallais, practised this operation on the 18th of July 1786, after a labour of 3 days, and on the 20th of August following the woman was cured.

15th. Lefranc, Surgeon at Pommeraie, performed it on the 28th of August 1787,

(1) For an account of Lauverjat's method &c, see Second Letter to Simmons pages 293—314 and First Letter p. 45 &c. T.

upon a woman, big of her 3d child; because he could not turn it. The cure was not finished before the end of two months (2).

16th and 17th. Soek, Surgeon at Leyden, operated upon two women with every desirable success; upon one, on the 13th of July 1789, who went out of doors on the 27th day; and the other, on the 21st of May 1792; her cure was equally complete on the 30th day.

18th. Lebas, Surgeon at Mouilleron performed this operation after a labour of 3 days, on the 26th of August 1769; and in the middle of October the woman was able to undertake her usual employment.

19th. The Same Surgeon assured Doctor Gallot, who communicated these facts, that he had operated upon another woman with the same advantage, two years before in the ci-devant province of Berri, where he then dwelt.

20th. Thibaut-Desbois operated upon the wife of a Notary of the City of Mans, on account of a rupture of the uterus, the 4th of October 1763, with so much success, that she was cured on the 30th day.

(2) These two cases of Favereau and Lefranc were communicated by Chevreul, Surgeon at Angers.

21st and 22d. LAMBRON, Surgeon at Orleans, has performed the same operation twice upon one woman (1), who has since laboured very fortunately. She was operated upon the first time, on the 9th of August 1775, and the second time on the 30th of December 1779.

23d. DUMAY, Surgeon at Fontenai-le-Peuple, performed the same operation on account of a rupture of the uterus, although the fœtus had not penetrated into the belly, on the 4th of Germinal in the 4th Year, (23d March 1796) and on the 30th day the wound was not larger than a shilling (2).

24th. Finally Mr. BACQUA has performed the cesarean operation more recently, namely on the 25th of Floreal in the 5th year, (14th May 1797) and has met with all the success, that could bedesired from it (3).

(1) The womb of this woman was lacerated in two successive labours and the infant, each time, passed completely into the cavity of the abdomen.

(2) This observation, highly interesting to the progress of the art, will be published at full length in the Recueil, when the further account of it, which has been requested, shall be received.

(3) See *Recueil Périodique* pag. 434, tom. IV.

If we be permitted to add to this Table the five other facts, announced as authentic to the Academy of Surgery by Warrocquier and Médérer, the fact, communicated by Colombier to the ci-devant Royal Society of Medicine and that of the negress of Jamaica, made known by Dr. Morton, we shall have thirty one successful cases and we do not doubt, but others, hitherto unknown, will soon be received.

All these facts do not equally establish the absolute necessity of the cesarean operation, and we are very far from applauding indiscriminately all these successes; for it might have been dispensed with in several of the cases, just related: But they incontestably prove, that this operation is not essentially mortal and that the danger, which accompanies it, frequently depends less on the importance of the parts, interested by it, than on the accidental circumstances, which afterwards present themselves; circumstances which have not always been well attended to by practitioners, and in the cure of which they have not had the courage to deviate for a moment from the ordinary rules, prescribed for the treatment of large wounds of the abdomen. With that boldness, founded on in-

formation, which Mr. Bacqua has shewn at different periods of the cure of the female, who is the subject of his observation, we might undoubtedly have obtained more success from the cesarean operation. If he had not taken care every day to destroy the adhesions of the parts, that kept the effused fluids far from the wound and opposed their discharge; if he had not introduced a catheter into the deep seated collection of matter, which threatened the most dreadful consequences, Mr. Bacqua, like many others, would have failed in attaining the end, which he proposed to himself, and would have furnished an additional arm to the adversaries of the cesarean operation, in making them acquainted with another victim. Vermond owed the preservation of the patient, whom he delivered of two healthy children, entirely to his introducing a *sonde de poitrine* (1) at

(1) A *sonde de poitrine*, or thorax-sound, very much resembles a female catheter; It is a silver tube about 5 inches in length and two lines in diameter. It is straight except at its anterior extremity, which is slightly curved for about 7 lines, and is closed at this extremity, but has two eyes or openings in the sides, about 6 lines in length and one in diameter. The posterior extremity is in the form of a funnel, that it may admit the siphon of a syringe,

different times through the wound and to his pushing a finger very deep, on the 6th day, in order to destroy the adhesions, which confined a quantity of fetid ichorous matter, that was occasioning very serious mischief; and Guénin, Surgeon at Crépy in Valois, at a very remote period, owed his success to the precaution, which he took, of slackening the suture nine hours after the operation, that he might push his finger into the cavity of the uterus and break the clots of blood, which obstructed both its orifice and the wound.

These fortunate cases appear very well calculated to animate those practitioners, who would still be afraid to perform the cesarean operation, under the pretext that it is essentially mortal, and to impose silence on those, who in our time renew the objections, which were made more than two centuries ago, with much more reason, against this operation. But these successes are not sufficient

and is furnished on the under side with a ring. This instrument is used in wounds of the thorax to push back the lungs and favour the evacuation of blood, pus or water; to break through slight adhesions and to conduct injections into the cavity: And it is applicable to the same purposes in wounds of the abdomen. T.

for the end, which we propose in a work of greater extent than this. Near these fortunate cases it is necessary to place all those of the same kind, which have not been successful to the mothers, or which have afforded no advantage. These, more numerous than the the former, being presented under the proper point of view in the Work, which we announce, will not be less useful than the others; they will contribute equally to the advancement of our knowledge. Besides, they will inspire practitioners of midwifery with that salutary diffidence, which leads to a consultation and to the assemblage of the greatest possible talents, when a great operation is to be performed, and will prevent them from undertaking the cesarean section alone, when the necessity and the urgency of it are not clearly demonstrated.

The operations, which have been performed unsuccessfully for both the mother and child, or which have only preserved the latter, and of which we have been able to collect any particulars, are forty two in number: We have not endeavoured to diminish the number of these, with the view of making the successful ones appear in a greater proportion. We should be glad to be made acquainted

with all the unfortunate cases, that have occurred in other nations as well as in France, in order to create still more aversion to this operation, which we have judged sufficiently dangerous to assure our pupils and to publish the opinion afterwards, that we can scarcely promise ourselves to save one woman in ten. (See the first and second editions of *L' Art des Accouchm.* Tom. II. § 1981.) The judgment, that will be formed of it from the Tables, which we are now offering, perhaps, will appear more consoling to humanity.

TABLE II.

Operations performed without success.

1st. A Surgeon of Saint-Etienne in Forez being called to the assistance of a woman, who was exhausted by her pains, these having continued three whole days, and who could neither be delivered by the crotchet, nor any other means that had been employed, thought it his duty to perform the cesarean operation, notwithstanding the small degree of hope which he perceived of saving the woman. She died eight hours after. This case occurred in 1751 and was communicated by Paret.

2d. Ledoc & Gauthier, Surgeons at Verneuil au Perche, performed this operation in an equally hopeless case, but on account of a cause different from faulty conformation of the pelvis (1), on the 31st of July, 1754. The woman, who was forty years of age, died on the fourth day: The child was preserved.

3d. Ravenet, a Surgeon at Paris, with the approbation of Gervais & Barbaut, his brethren, had recourse to this operation on the 3d of March 1758, on a woman, the small diameter of whose pelvis measured only one inch ten lines, when divested of the soft parts. This woman died the next day: but the child was saved.

4th. Vermond performed it with as little success on the 12th of July 1767, in the presence of Ravenet, Levret, Russel, Thevenot, Lafaye, Malonet & Portier, physicians, upon a woman, whose pelvis was only two inches and six lines in diameter. This patient appeared sufficiently well on the sixth day, to be allowed to take a soup; but on the eighth

(1) This was a thick, hard and apparently scirrhous substance, which diminished the entrance into the vagina so much, that one finger could not be introduced without a great deal of pain.

some alarming symptoms took place after some domestic vexation, and she died on the eleventh. The child lived six months.

5th. Cosme d'Angerville performed the same operation on the 30th of October 1770, with the consent of Barbaut, Péan, Tenon, Levret, Destremeau and Braillet, upon a woman, who died on the seventh day: Her pelvis was only an inch and ten lines from the symphysis pubis to the sacrum, and only one inch four lines from the bottom of the left acetabulum to the same point of the sacro-vertebral angle: The child, which weighed seven pounds and a half, was preserved.

6th. Vimar, a Surgeon at Nouvion near Rhetel, was called to a woman, whom three midwives had in vain attempted to deliver: Being unable to accomplish the delivery by the natural passage, on account of an inflammatory swelling of the parts, he had recourse, on the 2d of September 1772, to the cesarean operation, which was neither successful to the mother, nor child, one arm of the latter having been previously torn off.

7th. Cleriau & Barbot, Surgeons at Troc in Vendômois, having been obliged to bring away the head of the child in pieces in

order to deliver a woman in her first labour, whose pelvis appeared to be only two fingers breadth in diameter, determined to perform the cesarean operation in her second labour, although they were not called in, until she had been eight days in labour. The woman died on the eleventh day after the operation, of convulsive paroxysms, occasioned by indigestion; her situation till then having only excited slight apprehensions.

8th. HENCKEL, in Prussia, performed this operation in 1769 upon a woman of 37 years of age, whose pelvis only measured three fingers breadth in the direction from pubes to sacrum: He operated in the linea alba: The woman remained very well till the fourth day; but after some imprudent attempts to make her bed she was seized with vomiting and died on the fifth.

9th. DELEURIE practised it without success on the 4th of April 1779, in the presence of our colleague Sabatier, upon a woman, whose pelvis was only two inches three lines and a half in diameter: She died on the fourth day; but the child was preserved (1).

(1) See Deleurie's *Dissertation sur l' opération césarienne à la ligne blanche.*

10th. Bonnard, a Surgeon at Hesdin, not being able to finish the section of the pubes, which he had undertaken, on the 12th of February 1778, in a woman whose pelvis appeared to him to be only two inches, because *the symphysis was ossified*, had recourse immediately to the cesarean operation. The mother, whom he could not see afterwards, died about the eighth day; the child was very large and healthy.

11th. Warrocquier, in February 1776, operated upon a woman, after a labour of five days, in the presence of all the surgeons of Lille: The child was saved, but the mother, who had been a long time phthisical, died on the eighth day, the wound being cicatrised throughout almost the whole of its length. This patient had experienced a very laborious delivery in April 1775.

12th. It appears from some notes, that the same surgeon operated upon a third woman, who was remarkably deformed, after a six days labour, and that she died on the fourth day from the operation. She had previously had a very laborious delivery.

13th. Siebold (Gaspard) of Wurtzbourg, having experienced great difficulties in the section of the pubes, on the 3d of February

1778, and not having derived from it the advantages he expected, preferred performing the cesarean operation, the 26th of September following, on another woman, who died eight days after. The pelvis was only two inches in diameter transversely, and three inches from before to behind (1). The child was preserved.

14th. and 15th. MOREAU and FERRAND performed this operation twice in our presence at the Hôtel-Dieu of Paris; the first time, on the 2d of July 1778, upon a woman, whose pelvis was only two inches and a quarter in diameter; and the second time, on the 5th of August 1779, upon another woman, the small diameter of whose pelvis was only one inch eight lines. The first of these women died 44 hours after the operation, and

(1) Mr. Baudelocque has committed an error respecting the dimensions of this pelvis, which are thus stated by Weidmann. — " Perlustrantes ossium pelvis syntaxim, videmus pelvim minorem in magna aperturæ superioris diametro habere 4 poll. 6 lin.; in conjugata 2 poll. 7 lin.; in altitudine synchondroseos pubis 1 poll. 4 lin.; in latitudine ossis sacri 4 poll. 2 lin.; in exitu extremitatis ossis sacri ad arcum pubis 3 poll. 6 lin. Distantia ossis ischii ab extremitate sacri 3 poll." *Compar. inter Sect. Ces. & Diss. &c. pag.* 23.

the second on the tenth day. The child of the latter was saved.

16th. 17th. 18th. LAUVERJAT, before he obtained the success, mentioned above, from the cesarean operation, had practised it twice in the linea alba without any advantage to the women, and afterwards, according to his own method, upon a third woman in the hospital of the ci-devant Schools of Surgery. The one, operated upon, on the 3d of August 1778, died on the fourth day; the other, on the 1st of February 1781, died on the fifth; the third, immediately after the operation. The small diameter of these pelves was 17 lines, two inches and a quarter, and two inches four or five lines. The children were preserved.

19th. and 20th. I have practised this operation twice without success to the mother, but with advantage to the child. The former of these operations was performed on the 19th of July 1785, in the presence and with the approbation of Sigault and Baignières, Physicians at Paris, of Desault and many other practitioners, upon a woman, whose pelvis measured only one inch eleven lines in the small diameter: The latter was performed in my practical school, under the eyes

of Louis, Desault, Chopart, Coutouly, Lauverjat and a great number of pupils, upon a woman, whose pelvis was only two inches two lines: One of these women died on the fourth day and the other about the end of the fifth. During several months I had previously attended the latter in a scorbutic cachexy, which was of long standing and in a very far advanced stage.

21st. 22d. 23d. and 24th. Antoine Dubois has operated upon four women with as little advantage, since the year 1788; upon two in Lauverjat's method and two in the linea alba. Three of these operations were performed in my presence, including that on the female named Vasseur. The pelvis of all these women was under two inches and a half, except that of Vasseur, which measured two inches seven lines and two inches ten lines when divested of all the soft parts. Two most laborious deliveries, according to the account given of them to the School of Medicine by M. Dubois, attested this state of faulty conformation of the pelvis of Vasseur and the impossibility of delivering her of a living child by any other means than the cesarean operation. The

children of all these four women were preserved.

25th. DESGRANGES has communicated an account of the same operation's having been performed in the large hospital at Lyon, the beginning of March 1781, on a woman, whose pelvis was only two inches two lines in diameter. The child was living: The mother died the next day.

26th. DANVERS, Surgeon at Corbeille, performed this operation, in the manner recommended by Lauverjat, on the 8th of March 1787, upon a woman, who had previously suffered three very laborious labours: She died on the sixth day.

27th. The fact communicated by GILBERT, Surgeon of the hospital of Lectours, is the most extraordinary of this kind that we are acquainted with. The woman had been in labour seven days and every thing almost had been tried with the view of delivering her, before she was taken to the hospital; there only remained to be practised the cesarean operation and the section of the pubes, before all the resources of the art were exhausted. These were performed in succession: The former served to extract the trunk

of the child and the latter the head, which was wedged fast in the pelvis, after the division of the neck. The woman survived all these operations several days. The diameter of the pelvis was two inches and a half.

28th. A Surgeon of the Commune de ——, who had for a time quitted the practice of his profession in 1786, to hear my lectures, communicated to me a case, which ought to follow immediately that of M. Gilbert; the cesarean operation having been performed pretty nearly under the same circumstances, after the same attempts to accomplish the delivery by the natural passage, and the woman not having died till the eighth or ninth day. This surgeon had himself assisted in the operation (1).

(1) See the 2d and 3d edition of my *Art des Accouchemens*, Note to § 1723, tom. II. pag. 276.

The author informs us in the place referred to, that, after the body of the child was disengaged, a strong man, standing upon the bed of the patient, was obliged to pull a long time with all his force in order to extract the head, whilst another pushed it back with one hand introduced into the vagina, and that the woman appeared to be the victim of indigestion at a time, when her cure was confidently expected. He condemns in forcible terms the performance of the cesarean operation in those cases,

29th. Desault also performed the cesarean operation, in the night of the 5th & 6th of Fructidor in the third year (23d and 24th of August 1795), at the large Hospice d' Humanité, upon a woman of thirty-four years of age, who died on the seventh or eighth day. The smallest diameter of the pelvis was two inches three lines.

30th. and 31st. Pelletan, since the period of the operation performed by Desault, has practised it twice, at the same hospice, in the linea alba: Both the women died on the second day. The pelvis, when divested of the soft parts, measured two inches in its small diameter in both these women: The children were alive.

32d. Coutouly, who followed the method of Lauverjat in operating upon —— Desnos, of whom we have spoken above, has not been more fortunate than the rest. The operation was performed on the 20th of Ventose in the fifth year (10th of March 1797), and the woman died in 114 hours after: The child was preserved.

where the head is really wedged (enclavée) in the pelvis, and says the section of the symphysis pubis here promises greater advantages. T.

33d. and 34th. That we may conceal nothing, which has come to our knowledge, we shall add, that Gastrotomy was performed without success at Angers, on a woman almost dying, in order to extract from the abdomen a child, which had passed entirely into it after a rupture of the vagina near the neck of the womb, on the 5th of December 1781 ; and that another cesarean operation, announced by Camper to the Secretary of the Academy of Surgery in 1778, was performed in Holland upon a woman, who died almost immediately after she was put in bed. The small diameter of this pelvis was only eleven lines.

35th. The Paris Journal of Medicine, from 1770 to 1792, contains also some instances of the cesarean operation, performed without success. The first was communicated by Pietsch, Professor of Anatomy and Surgery: It occurred on the 13th of July 1764 (1).

36th. Thompson performed this operation in the London Hospital, in the presence

(1) Journal de Médecine de Paris, tom. 34. pag. 170. Some authors have mentioned this operation as completely successful.

of John Hunter and Cooper, upon a woman betwixt twenty-three and twenty-four years of age, the small diameter of whose pelvis measured only ten lines and a half. She died five hours afterwards, but the child was born alive (1).

37th. Juppin, Surgeon near Rethel, performed the same operation, on the 23d of July 1779, upon a remarkably deformed woman, who had been in labour from the 19th. She died the next day (2).

38th. and 39th. M. S. had also recourse to the cesarean operation, in consequence of his not being able to accomplish the delivery differently, although the pelvis was not, perhaps, very defective: The former of these

(1) Journ. de Méd. de Paris, Mars 1772. Medical Observations and Inquiries by a Society of Physicians in London, Vol. IV.—The author has erroneously stated this operation to have been performed in the London Hospital, and appears to have been led into this mistake by Mr. Thompson's being one of the Surgeons of the London Hospital. It was performed at the poor woman's own home in Rose and Crown Court, Shoe Lane, London. See Dr. Cooper's and Mr. Thompson's accounts of the case in the 4th Vol. of Medical Observations and Inquiries. T.

(2) Journ. de Méd. tom. 54. p. 65.

operations was performed in 1780 upon a woman, who died in 24 hours after; and the latter upon a woman, who also died on the day following. One of the children was born alive; the other was dead (1).

40th. The same operation was performed at Bayonne, on the 8th of September 1785, upon a woman 36 years of age, after a labour of 4 or 5 days' continuance. It was not had recourse to till after having brought down the trunk by the natural passage and having cut off the head. The woman did not die till the seventh day (2).

41st. Sommer, M. D. and Aulic Counsellor of the Duke of Brunswick-Lunenbourg, published in 1788 the history of a cesarean operation, performed eleven years before upon a woman, whose pelvis measured only *two* inches *four* lines in its small diameter. The operation preserved the life of two children, but the mother died on the 4th day. (3).

42d. A Surgeon at Lyon has very lately informed us, that he performed the cesarean operation, in the course of last winter (year 6th), upon a woman, whose pelvis was only

(1) Journ. de Méd. tom. 62. pag. 159. (2) Ibid. tom. 68. pag. 287. (3) Ibid. tom. 79. pag. 296.

one inch and a *half* in diameter; but she died at the end of twelve hours.

Admitting *all* the cases, announced in this Memoir, we observe, that they amount to seventy-three; that thirty-one of these operations have been performed with success to the mother and almost all of them with success to the child; that amongst those women, who could not be saved, there were several, of whom no hopes were entertained before the operation (1) and others, who appear to have been the victims of causes foreign to it, as sufficiently well-founded hopes were entertained of them till the moment, when these causes exerted their disastrous influence (2).

We find some women in this number, in whose cases the operation did not appear to be necessary, since they had previously had ordinary labours (3) and since the practi-

(1) Of this description were the women, operated upon by Paret, n. 1; by Ledoc and Gauthier, n. 2; by Vimar, n. 6; by Gilbert, in the hosp. de Lectours, n. 27; and that in n. 28.

(2) Such are those mentioned in n. 4, 7, 8, 9, 11, 15.

(3) It by no means follows that, because a woman has had several natural labours, the cesarean operation may not become absolutely necessary in a subsequent one. The contrary is proved by the cases of Isabel Redman,

tioners performed it for no other reason, but because they could not turn the children and extract them by the natural passage, either because they were not sufficiently well informed, or because it was impossible to turn the child at the time it was undertaken, as sometimes happens, when an accoucheur is called several days after the discharge of the waters and when other persons have made many fruitless attempts: These cases are much more common in the country and small towns than in large cities, where there are more well informed practitioners and it is more easy to procure assistance in time.

Of these *seventy-three* operations, *thirty-five* appear to have been performed upon the side of the abdomen and *eighteen* with success; *thirty* in the linea alba and *ten* with success; eight in Lauverjat's method and *three* with success (1).

Some further researches, to which the discussion of this Memoir has given occasion,

Elizabeth Thompson and other women, whose pelves have become distorted in consequence of Malacosteon. See my First and Second Letters to Simmons, and the Appendix to this Memoir. T.

(1) See *Second Letter to Simmons*, p. 310, &c. T.

have made us acquainted with other facts, which we add here in expectation, that a still greater number will come to the knowledge of the Society. Some of these facts are announced by Tenon, in his Memoirs on the Hospitals of Paris; others by Weidmann in a Latin Dissertation, under the form of a Thesis, supported on the 9th of September 1779, under the presidency of Siebold (1); and in the second No. of the Bibliothèque Germanique Médico-chirurgicale of Dr. Brewer. But the most extraordinary fact is found in our Port-folio.

Tenon, in his Memoirs on Hospitals, pages 251 &c, announces, that the cesarean operation has been performed unsuccessfully six times at the Hôtel-Dieu of Paris from 1773 to 1785 inclusively (2); that Pean has communicated to him another fact; that Isabeau, Surgeon of the Hospital of Gien, performed it in 1753; Lambert on ——

(1) This Dissertation is entitled: "Comparatio inter Sectionem Cæsaream & Dissectionem Cartilaginis & Ligamentorum Ossium Pubis in Partu, ob Pelvis Angustiam impossibili, suscipiendas."

(2) Two of these operations, performed in 1778 and 1779 by Moreau and Ferrand, are comprehended in the table, which we have given.

Castanet of Verrières, in 1763, and that the master of a forge near Orleans practised it upon his own wife, at a more recent period. He also makes mention of a case found by Goulin; of that of Mercet, preserved by Dalechamps; of one of Rousset, omitted by Simon; finally of that of Buyret, Surgeon at Sainte-Menehould, of which we have taken notice above.

Pelletan has informed us, that he never saw this operation performed in the Hôtel-Dieu of Paris, except once, in the course of eleven years preceding 1773, during which he was employed in this hospital.

Weidmann, in his Dissertation, relates:

1st. That the cesarean operation was performed with success in 1741, by the chief surgeon of the Bicêtre, upon a woman dangerously affected with a venereal complaint; but some eye-witnesses of the fact can still attest, that this woman died on the 18th day.

2dly. That Hermann Schuzer performed it in 1758, upon a woman, who died on the fourth day.

3dly. That Cooper had two cases, in which it was practised without success; one of the women having died twenty-six hours after and the other at the end of a few hours.

One of these cases has been given in our table under the name of Thompson.

4thly. That George William Stein has had recourse twice to this operation, with equal want of success to the women; one of whom died on the third and the other on the sixteenth day.

5thly. That Atkinson also performed it upon a woman, who died on the fourth day.

6thly. and lastly, He quotes from some news-papers the history of the operation, performed in Transylvania (twenty years ago) upon the Countess of Cheirey by Zimmermann, in order to extract a monstrous infant; an operation that had the most complete success.

The Bibliothèque Germanique of Brewer, independently on the principal part of these cases, which it also enumerates, has made the following ones known to us. It is there remarked:

1st. That Schmucker, in his Mélanges de Chirurgie, makes mention of a cesarean operation, performed with success upon a woman in the sixth month of her pregnancy, in consequence of her having been wounded by the horn of an ox, which had penetrated into the

womb and had occasioned the child's arm to protrude at the wound (*).

2dly. That Leber practised it with equal success upon a woman, who had previously been delivered three times (1).

3dly. That Dr. Fischer saw a woman at Leyden, who had been operated upon, eighteen months before, by Dr. Brand; that she and her infant were both very well; that he saw the cicatrice and that a surgeon, who was an eye-witness of the operation, assured him that the diameter of the pelvis was less than two inches (2).

4thly. That Starke, Professor at Jena, performed the same operation in 1782 on the 18th of December, and that the woman was cured on the 24th of February following (3).

We shall finish this account by a fact of a much more extraordinary kind than any thing, that has yet been presented, which was communicated to us by M. Lair Corigny, Officer of Health at Thorigny, in the Department

(*) Large wounds of the gravid uterus ought to be enumerated amongst the cases requiring the cesarean section. See Second Letter to Simmons, p. 204. T.

(1) Richter Chirurg. Biblioth. Vol. VII. p. 555.

(2) Ibid. p. 768. (3) Ibid. Vol. VIII. p. 226. T.

of Manche, on the 24th of Thermidor in the second year (11th of August 1794).

—— Brument of the Commune of la Frenaye, in the District of Candebec, Department of the Lower-Seine, aged thirty-nine, mother of several children and in the eighth month of her pregnancy, received a blow from the horn of a bull in July 1789, which opened the hypogastric region transversely and the anterior part of the womb, to the extent of more than ten inches. She was in the fields at the time this happened, at a considerable distance from home. The child immediately passed through this extensive laceration, which was attended with a prodigious loss of blood. The persons about this woman, being alarmed by her situation, durst not attempt to do any thing to relieve her, before the arrival of M. Lechaptois, Surgeon of the Commune of Lislebonne, which is a league and a half distant from that of La Frenaye, and contented themselves with wrapping the infant, which was alive, in an apron, without dividing the navel-string; so that more than an hour and a half passed, before she obtained any assistance. Lechaptois began by dividing the funis umbilicalis to separate the child from the mother,

who was in such a feeble state, that her pulse could scarcely be perceived. He then extracted the placenta through the wound; the womb being contracted and the hemorrhage restrained. He afterwards cleaned the intestines and the neighbouring parts, which were covered with blood and earth, by means of a sponge moistened in wine and water, replaced them in the cavity of the belly, made eight stitches of the quilled suture and covered the whole with a suitable dressing and bandage. After this the woman was carried home, the operation having been performed in the middle of the fields. The child lived eight hours and was carried to the church to be baptized. The next day M. Lair-Corigny was called in consultation. The patient was very thirsty, the pulse was small and very frequent, and the abdomen hard and painful, which induced them to relax one of the stitches a little. Her sufferings were less afterwards. Some chicken-broth and barley water with syrup of vinegar were directed for her drink and glysters and fomentations of a similar kind were employed. Ten days after, Lair-Corigny saw the patient again and found her as well as could be expected. She was neither feverish nor

thirsty; but, as she complained of a disagreeable taste, a gentle laxative was administered with advantage. The lips of the wound were almost united at this time, except in one place, where two of the stitches had cut through the parts and excited suppuration. The cure was completed at the end of six weeks. Five years after this enormous wound, the woman enjoyed very good health and had no other inconvenience than that, resulting from a hernia in the part, where the two stitches had divided the lips of the wound.

If we add to the Tables, given above, the cases announced by Tenon, Weidmann and Brewer, which are not comprehended in them (1), as well as that, which Pelletan witnessed, and that communicated to us by Lair-Corigny, the number will be ninety-

(1) We omit here from the account, given by Tenon, two of the operations, performed at the Hôtel-Dieu, because we have mentioned them under the names of Moreau and Ferrand; the fact, which he says was found by Goulin, because it occurred in the fourteenth century; that of Mercet, preserved by Dalechamps, and that of Rousset, overlooked by Simon, because they are of very ancient date and we have not chosen to admit any but the operations, practised since the year 1750. The same reason has induced us to take no notice here of the cesarean section performed at the Bicêtre in 1741,

three. And, since in the twenty additional cases there are six successful ones to the mother, the number of operations, performed with success, will amount to 37, and the number of unsuccessful ones to 56 (1).

A Note relative to the Delivery of — Marville.

(See the 15th and 16th pages, to which this note has a reference.)

A new case, which has occurred since the first reading of this Memoir to the Society of Medicine, proves so clearly the truth of all

although related by Weidmann. One of Cooper's cases, mentioned by Weidmann and that of Buyret by Tenon are suppressed here also, because they are in the Tables.

(1) In my two *Letters to Simmons* I have collected 112 successful and 43 unsuccessful cases of the Cesarean Operation: This Memoir contains an account of 23 successful and 43 unsuccessful operations, not noticed in my Letters: And the Appendix comprehends two additional operations, that have proved fatal to the mother. Hence, the whole number of Cesarean Births, of which I have been able to find any account, amounts to 220: And since M. Baudelocque has shewn, that the operation, performed in the Bicêtre and mentioned in my 2d Letter, page 284, as successful on the authority of Schuzer and Weidmann, was really not attended with success, the woman having died on the 18th day, the number of successful cases is 134 and of the unsuccessful 87. T.

these assertions, that *the founder of the anti-cesarean school* himself cannot now have any doubts, being more interested than any other person in this fact, which is his own work: It is the case of —— Marville, Sepulchre-Street, No. 711.

This woman, having arrived at the full time in her first pregnancy without any other complaints than those, which are very common to women with child, was first attacked with labour-pains in the night betwixt the 11th and 12th of last Fructidor (year 6th) (1) and sent for a student of medicine, who had bled her eight or ten days before. This young man, sufficiently versed in the practice of midwifery to know on examining her, that the degree of faulty conformation of the pelvis would present a very great obstacle to delivery, sent, about six o'clock in the morning, for M. Danian his Professor, who imparted to me, about ten o'clock, his fears and his views with respect to the means of delivering this woman, provided M. Sacombe, whom he intended to get called in, should refuse his assistance.

(1) The 28th and 29th of August, 1798. T.

This physician, whose assistance could not be procured, after a great deal of trouble, before five or six o'clock in the evening, having examined the patient and found that the labour was fairly begun, declared she would be delivered without the aid of any instrument and of a living child: He remained with her and also some of his pupils: On the 17th he called a consultation in his own name as well as in that of the husband of his patient. Messrs. Vitet, Physician and Member of the Legislative Body, Marchais, Boyer, of the School of Medicine of Paris; Sue, the younger, Leclerc, Physicians, and myself were called to this consultation, which took place betwixt six and eight in the evening. Sacombe gave us an account of what had passed during the five whole days, that he had attended this woman, without however noticing the medicinal means, that he had employed. He declared he had believed, that the labour would terminate fortunately and that the child would be born alive, although the superior aperture of the pelvis was contracted and the distance betwixt the ischiatic tuberosities, or the transverse diameter of the inferior aperture, appeared to him to be only 18 lines, upon this ground,

that nature, who gave to this woman the faculty of conceiving, would not refuse her the power of bringing forth. He added, if he had published in his writings that there did not exist any case, in which the female could not be delivered of a living child, it was because his practice had not at that time offered him an example of the kind; that he acknowledged the existence of such cases now that he had met with this, for which we were consulted; but that he still hoped the patient might be delivered without assistance, although her infant had been dead several days, because she was in a good state both as to strength and health.

Marchais, Vitet and myself examined this woman; Boyer, Sue and Leclerc declined it for fear of fatiguing her. We were of opinion, that the antero-posterior diameter of the superior aperture was betwixt two inches and a quarter and two inches and a half in extent and I added, that the transverse diameter of the inferior aperture, which Sacombe estimated at only 18 lines, was nearly of its usual length, without however examining it with much attention.

The state of the woman did not appear to us so flattering as he had announced; the

face was altered; the respiration rather hurried; the epigastric region and all the right side of the abdomen, in which the intestines were chiefly situated, were tumefied and tense; the pulse was frequent, rather irregular and weak; the tongue dry and reddish verging to brown.

The persons, called in consultation, were unanimous in their opinion concerning the situation of this woman and the necessity of proceeding to her delivery, which had been already too long deferred, of opening the head, with this view, and afterwards extracting the child by means of the crotchet. Agreeing perfectly upon this point with my brethren, I added, that, by delivering the patient, the progress of her complaints would not be put a stop to and the event would be unfortunate.

Although Sacombe appeared to acquiesce in the proposal of the practitioners, who were joined with him in consultation, yet he did not deliver the woman till the next day, the 18th, betwixt noon and two in the afternoon, and about the middle of the seventh day of the labour: He made use of the crotchet. The woman died on the 23d at noon, about the end of the fifth day from her delivery.

Copy of the Report of the opening of the body of this woman.

On the 25th of Fructidor in the sixth year of the French republic (1), we the undersigned, having been called to the opening of the body of the wife Marville, at No. 711 in Sepulchre-Street, who had died the preceding day, at noon (2), of the consequences of a laborious delivery and whose infant had been extracted by means of the crotchet from above the superior strait of the pelvis, agreeably to the unanimous advice of the citizens Marchais, Baudelocque the elder, Boyer, Vitet, Leclerc, Sue &c, who were joined in consultation, perceived nothing externally, before the opening of the body, except a faulty conformation of the legs and thighs.

On laying open the cavity of the abdomen we did not observe any effusion whatever: The stomach and intestines appeared to us of their natural colour, except that we remarked the vessels to be a little more distended with

(1) The 11th of September, 1798. T.

(2) There is an error here in the date; I have seen the letter of the citizen Sacombe to citizen Baudelocque, dated the 24th, announcing that the wife Marville died the day before, at noon. *Note du Rédacteur.*

blood upon the lower portion of the arch of the colon, which was extremely distended with air, than on the other viscera: The liver, the spleen, the pancreas and the kidneys were in their natural state; but the womb and the other parts of generation, as well internally as externally, were in a complete state of gangrene and putrefaction.

On paying attention afterwards to the pelvis, we found that the diameter, taken from the projection of the last lumbar vertebra to the upper part of the symphysis pubis, was only two inches four lines: The lateral diameter measured five inches: The extent, from the union of the body of the right os pubis with the os ilium to the projection of the last vertebra of the loins, was only one inch; and from the left os pubis, the extent was two inches and a half: The distance betwixt the tuberosities of the ossa ischia was three inches (1): With respect to the

(1) We have here another instance of an irregular, or oblique, superior aperture of the pelvis, such as is described in my *Second Letter to Simmons*, p. 188 &c, and figured in Plate VIth. T.

thorax and head we found all the viscera in their natural state.

Paris, the 25th Fructidor, 6th year of the republic.

The signatures of citizens Marchais, Leclerc, Sacombe, and Boyer are annexed.

Resolution *of the Society of Medicine of Paris, upon the Researches and Reflections of Citizen* Baudelocque.

The Society of Medicine, after having heard two readings of the Memoir of Citizen Baudelocque on the cesarean operation and the interesting discussion, to which it has given rise, considering;

1st. That it is demonstrated by experience, that cases do exist, in which delivery by the natural passages is impossible.

2dly. That in many of these cases the cesarean operation is the only mean, which affords any hope of saving the mother and child;

3dly. That this operation, however dangerous it may be, has been often practised with complete success.

Is unanimously of opinion, that it is the duty of the physician to have recourse to the cesarean operation in the cases, determined by the art. And in order to enable the learned as well as the public to form a judgment of an operation, which so nearly interests humanity, social order and the progress of the art, the Society decrees:

1st. That the Memoir of Citizen Baudelocque shall be printed in the next number of its *Récueil Périodique* with the Extract of the Report of the Sitting of this day.

2dly. That the Account of the delivery of the wife Marville and the Report of the opening of the body of this woman shall likewise be printed at the end of this Memoir.

3dly. That two hundred copies of this Memoir shall be taken, in order to be distributed amongst the different administrative and judiciary bodies.

A true Copy,

Sue, the elder, Secretary-general.

SECOND MEMOIR.

REPORT *upon an observation communicated by* M. R. TARBES, *officer of health at Toulouse, concerning the cesarean operation; and* RESEARCHES *and* REFLECTIONS *upon several other cases of the cesarean operation.*

Read on the 27th of Pluviose, year 7th (15th of February, 1799).

BY M. BAUDELOCQUE.

First Case. M. Tarbès, in presenting this observation, seems to have had no other end in view than to satisfy the desire, that I have manifested, of becoming acquainted with all the cesarean operations, which have been performed since the year 1750 with or without success, in order to draw from them some corollaries useful in the practice of this operation (1). He not only speaks of the case as an eye-witness, but adds some reflections, which he submits to the judgment of the Society.

The cesarean operation, in the case announced, was not the consequence of an ignorance of the principles of the art, as has been so often remarked, but that of a rigid

(1) See above pages 64 and 76.

observance of these same principles. Fifteen professors of the school of Montpellier, celebrated for ages, pronounced upon the impossibility of delivery and the necessity of this operation. Fourteen in some measure presided at it, or were eye-witnesses as well as M. Tarbès, a pupil of one of them.

The woman had been in labour during three days and the waters had been evacuated for twenty-four hours, when Serres, professor of midwifery, was called to her assistance. Her stature was only three feet and a half, or thereabout (1 mètre 1 decimètre 6 centimètres): Almost the whole habit of her body bore the marks of ricketts, with which she had been afflicted in the first years of her life; and the diameter of the superior aperture, passing from the pubes to the sacrum, appeared to be only two inches (5 centimètres $4\frac{1}{10}$ millimètres).

The external incision was made on the left side of the abdomen, along the external margin of the musculus rectus, below the umbilicus, because this side was more prominent than the other. That of the womb was begun about the lower angle of the former and was at first made only of sufficient length to allow one finger to be passed into the

cavity of this viscus, in order to direct the instrument, with which the incision was to be finished by cutting from below upwards and from within outwards

After the extraction of the child, which was dead, and the placenta, two stitches were made, not very tight and sufficiently distant from the lower angle of the wound to permit the discharge of any humours, which might tend to escape this way and to allow of injections, provided these should become necessary.

The patient appeared to be pretty well during the three first days, although she had gotten no sleep and the lochia had not been discharged any way. But on the fourth day the fever became very high and the abdomen was tumefied: Vomiting and purging of a blackish matter supervened in the course of the fifth day and she died on the sixth.

On opening the body they discovered 1st. an effusion of a whitish matter near the right iliac fossa, resembling the matter of lochia rather than pus, and to the quantity of about a glass. 2dly. That the wound of the uterus was nearly healed. 3dly. That there was no inflammation and that all the abdominal viscera appeared very sound. 4thly. That

the diameter of the pelvis, estimated at two inches before the operation, was only one inch and three quarters (4 centimètres 7 millimètres).

M. Tarbès, struck with the little success of the cesarean operation, thinks that we should succeed more frequently, if we could produce a discharge of the lochia by the natural passage, without however believing that this is indispensably necessary, since he is not ignorant that they passed constantly by the wound in the woman operated upon by Soumain. It would undoubtedly be a very great advantage to keep the neck of the womb constantly open for the lochia, to hinder them from passing through the wound of this viscus and thus prevent the effusion of them into the abdomen: But we should still more certainly ensure the success of the operation in question, if we could prevent the suppression of this important discharge: For it is not so much the retention, or the effusion of the lochia, which proves mortal, as the causes, which hinder the filtration of this matter.

Anodyne and relaxing injections, thrown up through the os uteri, appear to M. Tarbès as well as several other practitioners, very

proper to diminish the irritation of this viscus, and its spasmodic affection, and to determine the discharges to take their natural course. But we cannot always apply them, says he, either because the os uteri is so far closed, that the pipe of a syringe cannot be introduced, or because it is turned away from the axis of the vagina in such a manner, that the finger cannot reach it, as was the case in the woman, whom he saw operated upon in 1773. He thinks we might secure a facility of throwing up injections in all cases and at all times, by introducing a tube made of elastic gum, of a suitable length and diameter, through the vagina into the neck of the womb immediately after the operation; which should be pierced with two large holes on the sides of one of its extremities and furnished, near the other, with two small silver rings, suitable for receiving a ribband, destined to fix it and keep it in its place, as we do a pessary with a stem. M. Tarbès thinks, that the blood and lochia finding constantly a free vent by means of this cannula, would not easily escape into the abdomen through the wound of the uterus; that we might repeat the injection, whenever we pleased, by removing this tube, and extract

the coagula with our fingers, which could not otherwise be discharged.

The opinion of M. Tarbès will appear new only to those, who have not consulted the earliest writers on the cesarean operation. Rousset and, after him, Ruleau have recommended the use of a pessary, in the form of a cannula, in the treatment after this operation. Both proposed that it should be made with the end of a wax-taper pierced; that it should be covered with fine linen and that it should be introduced quite into the cavity of the womb. Both recommended also, that we should withdraw it and replace it every time we wished to use an injection, or to give vent to the retained matters: But it does not appear from any observation, that this has been employed, and these authors have taken great care to inform us, that it is not absolutely necessary.

The inconveniences of this practice at the present time strike us much more than its advantages; and, should they even be less than we suspect, they would appear sufficient to induce us to reject this pessary. A cannula of this kind, introduced into the cavity of the womb, would be more likely to retain the lochial discharges than to furnish them a

passage: It would determine them rather to pass through the wound than by the natural way: It would more certainly serve to augment the spasm, irritation and inflammation than to prevent or diminish them: Consequently it would aggravate the consequences of an operation, very dangerous in itself, if the womb could support its presence.

This cannula, by remaining in its place, would at most afford us a facility of using injections, the advantages of which are perhaps as much abused as the obstacles, that have appeared to hinder their use: For the difficulties, which we meet with, depend much less on the contraction, or closing of the orifice of the womb than on the deviation of this orifice. We should always find it sufficiently open, if we could place the woman in a situation, that would allow us to reach it and introduce into it the pipe of a syringe. Admitting the necessity of these injections, it would appear to us much more prudent to throw them through the wound of the uterus, which is constantly more open than the os uteri on the first days after the operation, though it would appear to have been equally inaccessible to the finger in the case, related

by M. Tarbès. It was not possible, says he, to find it the next day, by passing a finger under the abdominal parietes, so far was it removed from the external incision.

On reconsidering the manner of performing the cesarean operation in the case in question; the reasons which determined it to be made on the left side; the relation of the womb with the place, where the external incision was formed, and the change which this relation must necessarily receive after delivery, we easily conceive why the wound of the uterus could not be found the next day, by carrying the finger under the parietes of the abdomen. The womb being inclined towards the left side of the belly, since this was the most prominent part, must have presented to the edge of the instrument its anterior and right lateral parts, and, perhaps, if attention had been paid to the circumstance, the uterine wound would have been found on this side, on opening the body. After the operation, the womb sinking under the linea alba, which was at a great distance from the external wound, diminishing in bulk, losing its obliquity and arranging itself in the vertical line of the woman, and thus approaching to its natural position,

this wound must have concealed itself very deeply under the linea alba and perhaps beyond it, in passing towards the right side of the belly. By placing the woman upon her left side, whilst the finger was employed in seeking for this wound, it would perhaps have become apparent, even to the eye. The inconvenience, remarked in the case related by M. Tarbès, would not have taken place after the operation in the linea alba, if none of the precautions, recommended for performing it methodically, had been neglected.

Although this fact, which we are considering, does not seem very interesting in itself, since the operation was unsuccessful, we think the Society ought to give it a place in the *Recueil* as well as the four following ones. These cases in augmenting the number of those, which the Society has already made known, will serve like them to determine the degree of confidence, that ought to be placed in the cesarean operation.

Second Case. The first of these four cases might, in some respects, appear to be my own and probably some have been pleased already to consider it as such, although I only executed what nine persons, equally well informed in the different branches of the

healing art, had deemed indispensably necessary ; as the professor of Montpellier, Serres, in the preceding case was only the hand of the fourteen other professors, who had voted with him for the operation.

On the 13th of Pluviose in the seventh year (1st of February 1799), M. Plessmann, our colleague, desired Messrs. Marchais, Pelletan, Ané and me, to give him our advice respecting a woman, who had just been brought to the house of Mrs. Pradier, a midwife, and who, he thought, could not be delivered without performing an unusual operation. We did not see this woman till about six in the evening ; we all examined her and agreed, that it was physically impossible to deliver her of a living child by the natural passage and that the cesarean operation was indispensably requisite ; the diameter of the pelvis, taken at the superior aperture in the direction from pubes to sacrum, appearing to us at most only $2\frac{1}{2}$ inches (or 6 centimètres 7 millimètres). But we thought it proper to defer the operation till next day, as the first pains had only come on about four o'clock in the morning and the liquor amnii had begun to be evacuated. As the woman was in want of necessaries, she was carried about

half past nine in the evening to the hospital of the School of Medicine and operated upon the next day, the 14th, at two o'clock in the afternoon, after a very solemn consultation, in which nine persons out of ten voted for the cesarean operation and one only for the section of the pubes.

I performed the operation in the linea alba, in the presence of the consulting practitioners and a prodigious number of pupils, who could not be kept out of the room. I opened the womb in the middle and anterior part, making the two incisions only $4\frac{1}{2}$ or 5 inches in length (from 12 to 13 centimètres 5 millimètres), because the child appeared to be of moderate size. The edge of the placenta was found in the direction of the uterine wound.

The right arm of the child crossed obliquely the incision of the womb and, not being able to push it aside on account of the strong contraction of this viscus, the waters having been evacuated about thirty-four hours, I disengaged it, that I might seize the feet with more ease, which lay on the right side at the posterior part of the womb under the fundus. The extraction of the child was

not difficult and nature expelled the placenta almost immediately.

The womb on contracting sunk behind the teguments, lying betwixt the inferior angle of the external wound and the top of the pubes. A portion of the omentum and some turns of intestines then presented themselves: These were reduced, whilst we brought together the lips of the wound, and almost before they had been exposed to the air of the atmosphere. A slip of fine linen, some lint, compresses and a bandage constituted the whole dressing.

The operation lasted about 13 minutes: The woman supported it with courage and without impatience. A very small portion of the omentum was the only part that appeared after the external incision, having disengaged itself from under the uterus on the left side. This incision scarcely bled at all and that of the womb appeared to bleed more only because it interested the part, where the placenta was attached. Perhaps the quantity of blood, lost during the operation and dressing, would be much exaggerated by estimating it at two pallets and a half.

The patient, during the first two hours, complained only of a little difficulty of respi-

ration, which she attributed to the tightness of the bandage, but which most assuredly depended upon another cause.

About four or five o'clock in the evening, she had some degree of delirium, which I attributed to the abuse of an antispasmodic potion, containing thirty drops of liquid laudanum, and perhaps of wine, which had been prescribed in the first moments to support her strength. She ceased taking the potion and this slight delirium disappeared.

About nine or ten o'clock the pulse was contracted, slow and feeble; but the belly was soft. The lower part of the dressing was very moist and the discharge had been rather copious. The respiration was short, difficult and accompanied with a kind of rattling in the throat, which was troublesome to the patient. Before the operation this woman coughed and expectorated freely; afterwards she durst not, or could not, either cough, or spit, on account of the pain arising from these efforts. A potion, composed of borage-water and oxymel of squills, produced a slight expectoration: The respiration became more easy and the rattling ceased. She had some sleep during the night and a more copious

discharge took place from the wound than on the preceding evening.

The day after the operation, about ten in the forenoon, the situation of the patient presented nothing very alarming; the pulse was more free, the respiration less hurried and more regular, the inclination to cough and spit less frequent: But these favourable appearances vanished almost at the instant, that a crowd of pupils rushed round her bed to be witnesses of the dressing of her wound. The pulse again became contracted and the breast was so much affected, that she could not swallow half a spoonful of wine, without being menaced with suffocation.

A portion of the omentum and some circumvolutions of the small intestines protruded through the wound, whilst the dressing was removed, and were immediately reduced. At this dressing we made use of straps of sticking plaister, dry lint, compresses, an uniting bandage and another bandage to secure the whole. The catheter was passed, as the patient had not made water since the preceding evening: A gentle clyster was administered and she was removed to another bed.

If we had entertained hopes, on visiting this woman, about ten o'clock, that the day

would pass without any great alarm, we left her about eleven, fearing that we should not find her alive in the evening. The delirium reappeared soon after; the respiration again became painful, laborious and even convulsive; the rattling took place and her jaws were occasionally locked: About three in the afternoon she was in agonies and she died betwixt five and six (27 or 28 hours after the operation).

I shall not dwell here upon every appearance, which the opening of her body presented: Reserving these details for another opportunity, I shall only direct your attention to the most important points and leave them to your consideration.

Notwithstanding the tumefaction of the abdomen, which did not supervene till after death, the straps of adhesive plaister kept the lips of the wound pretty near each other, so that nothing had been able to insinuate itself betwixt them, except some very small portions of the omentum. These straps being removed, the wound was found to be only four inches one line in length (or 1 decimètre $1\frac{4}{10}$ centimètre) and $2\frac{1}{2}$ inches in its greatest breadth (or 6 centimètres $7\frac{6}{10}$ millimètres).

The omentum was spread out under the wound, forming as it were its bottom, and was in a sound state. The small intestines, the arch of the colon and the stomach were very much distended by an elastic fluid, but were not altered. The wound of the uterus was still $3\frac{10}{12}$ inches long (or 1 decimètre $3\frac{6}{10}$ millimètres). This viscus was inclined towards the forepart of the right iliac fossa and its cavity was filled with blackish clots of blood; Similar clots of blood, connected with these and with the clots issuing from the lower angle of the external wound, were effused betwixt the womb and the peritonæum. The whole quantity was estimated at a pallet and a half. The abdomen contained likewise a little of a reddish serosity. The lungs were distended, as if they had been inflated, and were of a lead colour: each cavity of the thorax contained about a pallet of bloody serosity.

The child, which had been supposed to be very weak before the operation, scarcely shewed any signs of life at the time of its birth; but with a little care it was so far reestablished, that we left it an hour after, without any anxiety concerning its life, or preservation. Being placed for a considerable

time upon a tolerably warm stove and afterwards laid very near it, the child grew weaker again and died about six o'clock.

This case and that of M. Tarbès appear as proper to engage your attention as the two following, with which they form the most remarkable contrast. In one, fifteen professors of a celebrated school pronounce upon the necessity of the cesarean operation: It is performed by one of them under the direction of the others and is unattended with success. In the other a number of practitioners, almost equal to that of the professors of Montpellier, see no other resource than the cesarean operation: It is performed in the midst of this crowd of luminaries and the event is not more fortunate. In one of the two following cases, one man constitutes himself the arbiter of the destiny of the woman and her infant; he decides upon the necessity of one of the most important operations of our art; he undertakes it without any assistants except her husband, a woman eighty years of age and a little girl. Two leagues distant from home and in the middle of the night, he deems it as useless to procure the instruments, suitable for the performance of it, as to call in any of his brethren. He

operates with a bad razor and he preserves the mother, as he would also have preserved the child, if it had been alive at the time. In the second, which is undoubtedly still more extraordinary, the accoucheur opens the abdomen and the womb of a woman, whom he believes to be dead; he extracts the child and takes flight the moment the woman, who was only in a syncope, sends forth a sigh and complains of the injury done to her; and this operation is nevertheless followed by the success, which nature seems pleased to deny in most instances to the most wisely combined efforts of art, as if she were afraid to share the glory of it with men, who would seem better entitled than the others to attribute the success to themselves.

One of these facts has been communicated to us by M. Poumel, surgeon at Moissac, in the department of Lot; the other is given in a small work, entitled *Essai sur les accouchemens*, published in the 5th year, by M. Bodin surgeon and member of the legislative body. Here is an extract from these observations.

Third Case. On the 14th of ventôse year 6th (4th of March 1798), M. Poumel was sent for to deliver the wife of Arnaud Géraud,

a labourer at Ste. Thécle, who had been in labour several days. This woman, says he, was ill formed, rather lame and a little hunch-backed, in other respects tolerably strong. The labia pudendi and nymphæ were tumefied and painful to the touch: The belly was beginning to swell. The head of the fœtus was wedged in the upper aperture of the pelvis and one of the arms was engaged along with it. Seeing her, adds he, in imminent danger, from which she could only escape by a speedy delivery, and convinced that there would be as much difficulty in delivering her by means of the forceps as inhumanity in employing the crotchet, if the infant were still alive as he supposed it to be, he determined to perform the cesarean operation.

Being two leagues from home, in the middle of a forest, and in the night, he thought it unnecessary to send for suitable instruments and surgeons to assist him in the operation. A bad razor, the poor woman's husband and another man, who took flight on the first cries of the patient, a woman eighty years of age and a little girl appeared to him capable of supplying every requisite.

He made the incision in the middle of the abdomen, extending it to an equal distance above and below the umbilicus; this part appearing to him preferable to every other. He opened the womb in the same way and, after extracting the child and placenta, he made several stitches, which, according to the woman's account, were much more painful than the principal operation. The child was dead. M. Poumel gives no particulars of the accidents, that followed the operation, or of the means employed to combat them; He remarks only, that the cure was completed in less than two months and that in Fructidor following the woman believed herself pregnant again. This case is attested by some professional men, who saw the patient on the day after the operation and attended to the treatment, as well as by some other persons.

In communicating it to the Society, I have no intention of justifying the conduct of the operator: Perhaps I should have no more reason to blame it, although the inutility of the cesarean operation appears to me more clearly demonstrated in this observation than its indispensable necessity. The success,

which followed this operation, appears to me much less astonishing than the boldness of the surgeon, who dared to run the risk of having the sole charge of an event, which is but seldom so fortunate.

Fourth Case.—Gauthier, of the village of La Janverie, commune of Montaut, department of Loir-and-Cher, being at her full time and in labour, fell into such a state, that Penard, a surgeon at Cangey, believing her to be dead, opened her belly and womb with a razor, to save the life of the child. Terrified by a sigh, which the woman fetched, and some words, which she articulated distinctly, at the time he was endeavouring to push a needle into one of the margins of the wound, to make a stitch with the sole view of keeping the intestines in the belly, he took flight and did not return to the patient till he had been repeatedly desired to come and sew her up again. The brother of Penard, a surgeon at Limeray, conducted the after-treatment so fortunately, that this woman was still living in September 1792. She had suffered no other consequences from the operation except a ventral hernia, which had served her as a pretext for bringing an action against Penard, because, said she, he

ought to have sewed her up with needles of a particular kind, instead of common needles. M. Bodin adds, that the proceedings in this action may be still found at Onzain([1]).

Fifth Case. Mr. ——, officer of health at Epinal, department of Vosges, has just informed me, that he performed the cesarean operation, in the course of the 6th year, upon a singularly deformed woman, three feet and a few inches in height and covered with an inveterate eruption. She had been in labour 36 hours and her pelvis was at most only two inches in diameter, according to the estimate which he and five of his brethren, called in consultation, had made of it. He practised this operation in the linea alba and the placenta, as in one of the preceding cases, was found in the course of the incision. Two stitches of the quilled suture were made. The mother died in the night betwixt the third and fourth day after the operation; but the child, which was very strong at its birth, is at this day in good health.

([1]) Essai sur les accouchemens, page 135.

APPENDIX.

BY

J. HULL, M. D.

" Puissent ces réflexions faire sentir aux médecins combien les sciences physiques, trop souvent regardées comme de simples accessoires de la science médicale, peuvent un jour devenir importantes! combien il est nécessaire pour eux d' en étudier & d' en suivre le marche; parceque c' est par leur secours & surtout par les progrès de l' analyse animale, qui se perfectionne de jour en jour, que bientôt peut-être on verra diminuer & l' incertitude d' un grand nombre de nos moyens & franchement, disons-le, la trop fréquente ambiguité de nos conjectures !"

Halle Annales de Chimie. T. 18. p. 137.

APPENDIX.

BEING desirous of laying before the public an account of all the cases, that have come to my knowledge, in which the Cesarean Section has been performed successfully or unsuccessfully, I shall here adduce two of the latter description, that have occurred in Great Britain, since I wrote my Second Letter to Mr. Simmons. To these I shall subjoin an account of three cases, that have happened in Manchester and its vicinity within the last thirteen months, in which, the attempts to deliver the women *per vaginam* proving fruitless, they and their infants all perished.

SECTION I.

UNSUCCESSFUL CASES OF THE CESAREAN OPERATION.

Case I.

This operation was performed, in March 1800, by Mr. John Bell, Surgeon in Edinburgh and Author of two valuable works on Anatomy and Surgery. The child was pre-

served: But the mother expired in about an hour after her delivery. Mr. Bell attributes her death to an internal hemorrhagy.

Whilst I regret, that I cannot state, whether this was a case of Malacosteon, or indeed any further circumstances relative to it, I am happy in being enabled to give a very full and satisfactory history of the next case. It was communicated to me by Mr. Walter Dunlop, an ingenious surgeon at Rochdale in this county, who performed the operation.

Case II.

" Susan Holt, the subject of this case, was in the thirty-sixth year of her age and resided at Lower Shone, about three miles from Rochdale. She was married, when about nineteen, and has been the mother of ten children, all of which she carried to the full time. Soon after her first labour, about fifteen years ago, she began to complain of pains in her shoulders, which she attributed to Rheumatism. These continued to harass her until her second pregnancy, when they fixed in her back, loins and hips, and proved a source of great uneasiness to her for three years: Her walking

then became impeded and continued to be attended with very great pain for about four years more. During the latter part of this period an evident distortion of the bones took place in different parts of her body and was accompanied with a general wasting of her flesh and diminution of stature. In seven years more the lameness and emaciation had increased to such a degree, that her person exhibited a sad spectacle of the ravages of Malacosteon."

" She was delivered of her first five children without any difficulty by a midwife. In her sixth labour she was also attended by a midwife: The child presented with the feet and the body was brought down without much difficulty; but the head remained unextracted, in spite of all the endeavours of the midwife, for almost a whole day, which deterred the poor woman from trusting herself into the hands of her midwife any more."

" About six years ago I was called to attend her in her seventh labour, when she appeared much emaciated and had been unable to walk for three months without excruciating pains: Upon examination I found such a degree of deformity in the bones of the pel-

vis, as forced me to send for the perforator and crotchet, which enabled me to accomplish her delivery, but not without a deal of hard work. Her recovery was painful and tedious."

" In about eighteen months after, she had occasion for my assistance again. The distortion of the pelvis had increased, which necessarily rendered this delivery more tedious and difficult than the last: However it was effected by performing Embryulcia as before. The most troublesome circumstance, that supervened to this parturition, was a *prolapsus uteri*."

" At the end of twelve months more I found her in labour of her ninth child, the third and last time that the capacity of her pelvis would admit of embryulcia being employed. The head of the child lay so high above the brim of the pelvis, which was now extremely contracted at the superior aperture and was likewise so much diminished at the inferior aperture by the approximation of the rami of the ossa ischia, that the perforation of the cranium was attended with the greatest difficulty. After diminishing the volume of the head as much as possible, the exertion made to bring it

through the pelvis was so great and so long continued, that the poor woman became insensible. I now began to be alarmed for the fate of my patient, but rather than abandon her in this perilous situation and leave her half-delivered, I resolved to continue my exertions, which at length overcame the obstacles to her delivery. As usual she had a very tedious recovery."

" Her husband now saw the dangerous effects of cohabiting with his wife, in consequence of her infirm and deformed state, and resolved upon a separation ; which however did not continue long : for in less than two years I was sent for to attend her in her tenth labour. This was on *Tuesday*, the 3d of February 1801. I reached her house about five o'clock in the evening and upon enquiry learned, that she was at her full period of utero-gestation and had been taken in labour on Sunday the 1st of that month, about two o'clock in the afternoon. Her pains continued more or less severe until two o'clock on Tuesday morning, when the membranes broke and a considerable quantity of liquor amnii was discharged during the following pains, which increased in frequency and force, until I visited her."

" On examination per vaginam the os tincæ was found dilated to the size of a crown-piece, and the position of the child ascertained to be preternatural. The presenting part, I believe, was a foot. Since her last delivery the distortion of the pelvis seemed to have made a most rapid progress. The branches of the ossa ischia now approached so near to each other, that a finger could not be introduced betwixt them. The superior aperture could only be reached by pressing back the perinæum and introducing my fingers behind the tuberosities of the ossa ischia, which were very near to each other. This aperture was very much diminished in capacity from the great projection of the os sacrum and lumbar vertebræ: As near as I could judge from attentive and repeated examinations, the distance from the os sacrum to the ossa pubis did not exceed one inch and a half, and the whole of the pelvis seemed nearly as narrow as that of Elizabeth Thompson. Such indeed was the general distortion of the pelvis, that it rendered the introduction of a hand, in order to bring down the feet of the child, altogether impossible: And provided the head had been the presenting part, it would have been a

nice and arduous task to have conducted the perforator with safety to it."

" I was now fully convinced, that art could not interpose to save the life of the child, or give the mother a chance of recovery, in any other way than by performing the cesarean section. I therefore informed the poor woman, that it was requisite for me to go home in order to bring what was necessary for assisting her delivery; which she agreed to, begging that my stay might be as short as possible, because she found herself unable to exist long in her present situation."

" Sensible of the danger, that would arise from any further delay, I returned prepared to perform the operation. Her pains had been as frequent and severe during my absence as before; but had produced no farther dilatation of the os tincæ, or alteration of the presenting part. I now informed the poor woman, that the child lay quite out of my reach, and that it was impracticable to deliver her by the natural passage, and intimated to her, that there was another method of delivery, by which alone she and her infant might have a chance for their lives. I explained to her the nature and consequences of this operation, observing at the same time,

that the hour of her dissolution was certainly near, if it were not performed. On hearing these suggestions she readily consented to any operation, that I deemed proper for her relief."

" The mother thought her child was alive, although its motions had been rather obscure since the labour-pains became strong: And I had reason to believe her three last children were living, when embryulcia was performed."

" The state of the rectum and bladder was favourable to the operation, the former having been emptied once and the latter several times, spontaneously, in the course of the day."

" The necessary preparations being made, the operation was begun about ten o'clock in the evening, with the assistance only of an old midwife and three other female attendants. I have to regret the want of my brother's advice and assistance, on this important occasion, who was confined by a Typhus, caught when attending to the duties of his profession."

" Having my patient placed upon a sofa in as convenient a position for the operation as possible, I began the external incision two

inches below and on the right side of the umbilicus and carried it upwards in an oblique direction to the left side, making an opening through the skin, muscles and peritonæum, six inches in length, upon the most prominent part of the abdomen and immediately over the head of the child, which could be distinctly felt, from the thinness of the abdominal parietes. The uterus appearing fully in view, an incision was made upon the body of this viscus and brought up to the fundus in a less oblique direction than the external wound. Seizing the child by the head and arms, I readily extracted it, and having tied the funis umbilicalis I removed it. The placenta followed with the greatest ease and expedition. The intestines now began to protrude very much and it required so much care and attention to return and support them, that I had not an opportunity of examining the internal state of the uterus, which I only squeezed gently, trusting, from the dilatation of the os tincæ, that the effused blood would find its way per vaginam. The lips of the external wound were brought into contact by a number of ligatures, inserted near each other, but not passed through the peritonæum. Proper dressings being then

applied and secured by a moderately tight bandage, she was carried to bed having suffered less pain than in her three last labours. She bore the operation with astonishing fortitude and made but little complaint. She had a propensity to vomit but did not bring up any thing: Her pulse was frequent and rather small, in other respects the operation seemed to produce no violent shock upon the constitution and I ordered nothing but a strict antiphlogistic regimen to be observed. The hemorrhagy, that occurred during the first part of the operation, was not of the smallest consequence; but during the second it was more considerable, from the lower part of the incision into the uterus falling upon the placenta; yet, as near as I could judge, the quantity of blood lost did not exceed eight or nine ounces."

" The child did not cry, when first brought into the world; but, before I had finished the operation, I was cheered by its strong and reiterated cries."

" About two hours after the operation the woman became more sick and vomited; she afterwards passed a tolerable night and had some sleep."

" On *Wednesday*, the 4th of February,

about eight o'clock in the morning, she began to complain of pain in the abdomen and the vomiting returned; and, as she had not had any evacuation either by stool or urine since the operation, a clyster was immediately given, but without effect. In the afternoon I visited her and found considerable tension over the abdomen, with pain on pressure and vomiting at intervals. She had no headach. Her heat natural: Thirst troublesome: Pulse 130 and body still bound. Hitherto there had been no lochial discharge per vaginam. I ordered the clyster to be repeated, warm fomentations to the abdomen and some pills with calomel to be taken every three hours, until the bowels should be freely emptied. A saline Julep was likewise prescribed to allay the vomiting."

"On *Thursday*, the 5th, she appeared pretty cheerful and had passed a good night: The pain of the abdomen was much relieved by the warm fomentations: She had made water twice, but had not had a stool. She was ordered to adhere to her antiphlogistic plan of regimen: An ounce of Castor-Oil was given instead of the calomel pills, which had not been taken as prescribed. The oil being returned by vomiting, a purgative

clyster was ordered to be thrown up in the afternoon and, if it failed to procure a stool, the calomel pills were to be repeated."

" On *Friday*, the 6th, she had experienced great relief from three copious loose stools, which she had passed this morning. The tumefaction of the abdomen was subsided and she could bear it to be pressed without pain. Her vomiting less urgent: Tongue dry and furred: Thirst troublesome: Heat natural: Pulse 130 and feeble. There had been a moderate discharge of blood per vaginam. The dressings were removed from the wound, which had a healthy appearance, and its lips were in perfect contact."

" On *Saturday* afternoon, the 7th, I was informed, that she had had a good night and no return of the vomiting for twenty-four hours. She had eat a little several times in the day and was confident she should recover. The attendants, finding her so well and cheerful, had thought fit to remove her from the bed, until it was adjusted, and she bore this without inconvenience."

" I likewise learned, that in the absence of her husband she got out of bed this evening, with the assistance only of two of her children, and drank some cold beer."

" *Sunday*, the 8th. Having occasion to meet in consultation Charles White Esq. from Manchester, who has long been considered as one of the first practitioners of the age and, finding him inclined to visit my cesarean patient, I gladly conducted him to her place of abode."

" We found she had passed a good night: The vomiting had entirely ceased and her bowels were regular. The discharge per vaginam continued in small quantity. The pulse was 120 and the tongue had assumed a moist and clean appearance: Her thirst was considerably diminished and her appetite began to return. She had taken water porridge and milk to breakfast and broth with bread at noon. Notwithstanding all these favourable circumstances, upon removing the dressings from the wound, we found that its edges had assumed a puffy and slightly gangrenous appearance and that they were separated in the middle, owing to two ligatures having given way. To arrest the progress of the gangrene Mr. White recommended Musk and Volatile Alkali and believed, if this could be accomplished, that there was no other attending symptom, which could interfere with the poor woman's recovery."

On *Monday*, the 9th, Dr. Hull, having been called over to Rochdale to see a patient, visited Susan Holt with me about three in the afternoon. She was now greatly changed for the worse her situation being almost hopeless. She had been seized in the course of the forenoon with violent fits of cramp, to which she had been very subject in her four last pregnancies. These spasms now affected not only the superior and inferior extremities, but also the stomach, occasioning very great difficulty of breathing. Her pulse was 140 and very feeble: Her countenance paler than usual and contracted. The abdomen was more tumefied and on examining the wound, we found its lips gangrenous, considerably more open and discharging a thin sanious matter. As she could not take Musk and Volatile Alkali, in the form prescribed, a decoction of Peruvian Bark with Spir. Am. Comp. and Tinct. Opii was given instead thereof."

" She declared to Mr. White and Dr. Hull, at their respective visits, that she had suffered less from the cesarean operation than from any of her three deliveries, which were effected by Embryulcia."

" *Tuesday*, the 10th. I did not see her again, but afterwards learnt that she spent a restless night from repeated attacks of the spasms and died this morning, having been sensible to the last."

" I informed her husband, that the preservation of the pelvis would be of great importance to the medical world on account of its unusual distortion, and earnestly requested to inspect the abdomen, but I could not obtain leave."

" The spine was extremely curved forwards and the trunk, in consequence, was so much shortened, that the false ribs were sunk below the cristæ of the ossa ilia. For about eleven or twelve weeks before she underwent the cesarean section she had been carried to and from bed."

" By desire of the mother the child was baptized and named *Patience*, on the day after its birth. The last time I saw the little Cæsonian, which was on the 9th of February, she was likely to be reared with proper care: But I have since learned, that she died when only a fortnight old."

REMARKS.

Upon the former Case I have only one observation to offer, namely, that the cesarean section has been so rarely attended with, or succeeded by, a violent hemorrhage, that this is the only instance, in which I find the death of the patient ascribed to this cause, notwithstanding it constituted the grand objection of the earlier adversaries of this operation (1).

The latter Case furnishes an additional instance of the inability of the human body, when affected with an extreme degree of Malacosteon, to withstand the shock of the cesarean operation and repair the injury done by it alone, or by it and the pains of labour, taken jointly.

The number of fatal cases of this kind, that have been recorded and collected, is now so great as almost to preclude every hope of preserving the life of a mother, affected with Malacosteon, by the cesarean

(1) See an account of the sources of danger from the cesarean operation in my *Second Letter*, p. 323—346.

operation. The lips of the external wound, though kept in the most perfect contact by means of sutures and adhesive plaisters, shew little, or no, disposition to heal by the first intention: And the effects of the inflammation, arising from the incomplete state of the abdominal cavity and the injured and exposed state of the viscera, cannot be long supported by these feeble and nearly exhausted systems.

Of the 18 women, upon whom the cesarean section has been performed unsuccessfully in Great Britain, *seven*, at least, are ascertained to have been in an advanced stage of malacosteon; *five* were highly endangered by the long continuance of labour or injuries sustained previously to the operation; *one* appears to have been in a favourable state; and of the situation of the remaining *five* we cannot form any accurate judgment, for want of more detailed accounts ([1]).

From this view of the state of the British patients, upon whom the operation has been unsuccessfully performed, we are enabled to account satisfactorily for its great fatality

([1]) See my First Letter to Simmons, p. 69 & 70.

here. But it would be unfair to estimate the chance of a patient's surviving the cesarean operation from the experience of this island. *We* have recourse to it only as an operation of necessity, where we can neither accomplish the delivery by diminishing the bulk of of the child, nor by any other means. The practitioners of France and other states on the Continent of Europe perform it not only as an operation of necessity, but as an operation of election, where the mother may confessedly be delivered with considerable safety, by sacrificing the life of the child: It would appear also, that in general they have recourse to the operation, before the patient has suffered very much from the continuance of labour. Upon these grounds only, I apprehend, is the greater success of the continental compared with that of the British surgeons to be accounted for. Their experience, however, considered in the aggregate presents the proportion of successful and unsuccessful cases of the cesarean operation, when performed both as an operation of necessity and of election: And, before we can determine the proportion of cases, in which this operation itself does necessarily prove fatal, those patients must be deducted,

who were in an advanced stage of malacosteon, and who were debilitated, or otherwise injured in any material degree, previously to the performance of it. By making an estimate in this way and in this way only can we determine, how far the death of a patient is to be attributed to the operation, to previous disease or injury, or to these circumstances taken collectively. It may be further remarked, that the result of this practice in Great Britain presents rather an unfavourable view of the success to be expected from the cesarean section, performed as an operation of necessity; inasmuch as it was too long delayed in some of the ricketty women. For the same reason the result of the practice on the continent presents rather an unfavourable view of what may be expected from it, when resorted to as an operation both of election and necessity: And it may be expected, not without reason, when the propriety and necessity of this operation are universally admitted and when surgeons proceed to the performance of it in the early stage of labour, that a greater proportion both of parents and children will be preserved than has been hitherto done — the great object, which I have had in view in

bestowing so much time and attention upon the consideration of the cesarean section.

SECTION II.

THREE CASES IN WHICH THE MOTHERS DIED UNDELIVERED AND THEIR INFANTS PERISHED WITH THEM.

Melancholy as the two cases, just related, may appear, I have now to record three of a still more afflicting nature, in all of which the distortion of the pelvis was occasioned by Malacosteon. They have all occurred in this neighbourhood, since I wrote my Observations on Mr. Simmons's Detection &c, and with the cases, already published by me and some others, which I have heard of, too clearly evince, that this affection of the bones, as far as the pelvis is concerned, is no very uncommon occurrence. They also create a suspicion in my mind, that many similar cases have been met with, of which no public notice has been given by the attendant practitioners, and consequently, that numerous instances remain to be recorded, wherein the pelvis was too much contracted to admit of delivery by the crotchet, or by any other means than hysterotomy.

The first Case was communicated to me by Mr. W. Barlow; for the second I am indebted to Mr. Walter Dunlop of Rochdale; and in the third I was personally concerned.

Case I.

" Jane Kinnerley of Water-street, Manchester, aged 35, began to be in labour of her eighth child on Sunday, the 16th of March 1800."

" Her former labours had been easy and in general very quick. In her lyings-in she had recovered well, having never been subject to any material complaint, and her health, in short, had always been very good until the beginning of this pregnancy. Betwixt the 3d and 4th month she was much afflicted with pain about her loins and hips, which she attributed to Rheumatism. She soon became very lame, and from this time could never get out of bed without assistance."

" About eight in the evening of the day, above mentioned, she had some smart pains, by which the membranes were soon ruptured and a considerable quantity of water was discharged. After this the labour-pains immediately left her and she never felt the

child move afterwards. She began to complain of griping pain in the abdomen, and was troubled with vomiting and purging, but passed a tolerable night."

" She was attended by Mrs. Bradley, a midwife of the Lying-in Hospital, from the commencement of her labour, who examined her, but could neither reach any part of the child nor the os uteri."

" On Thursday, the 20th of March, one of the men-midwives of the charity visited her. There was a discharge of bloody water per vaginam: But she had experienced no return of labour-pains. She still complained, however, of gripings, had a troublesome diarrhæa and vomited very frequently a fluid of a reddish colour. She was much emaciated and debilitated and, on laying his hand upon the abdomen, he was much surprized to find the limbs of the child so distinctly perceptible through the parietes. He was thence at first led to suspect, that the fœtus was not in the womb; but, as the poor woman assured him, that her belly was not different to the touch from what it had been in her former pregnancies, and as the midwife, on being particularly questioned, declared there was nothing extraordinary to be perceived on an

examination per vaginam, he contented himself with directing some medicines for her. He visited her on the day following and found her nearly in the same situation."

" On Monday, March 24th, she was visited in the evening by Mr. Wood; who examined her, but could neither reach the fœtus, nor os uteri. Finding a considerable degree of deformity in the pelvis and that the patient was sinking very fast, he called a consultation of the accoucheurs of the Lying-in Hospital, and Mr. White and Mr. Hall met him soon after. The patient being now in a hopeless state and the child being believed to be dead, it was not thought prudent to make any attempt to deliver her."

" The matter, which she brought up by vomiting, became coffee-coloured or blackish; she grew gradually weaker and expired about ten o'clock this evening."

" Her body was opened on the second day after her death and the child was found lying in the general cavity of the abdomen, envelopped in a thick layer of coagulable lymph. Its head was turned towards the upper part of the cavity and the nates to the pelvis with the back placed anteriorly. The cervix uteri

was ruptured anteriorly, and on the right side in a transverse direction, to the extent of about four inches. The placenta remained in the uterus, but was detached from it. Most of the abdominal viscera appeared highly inflamed."

" The dimensions of the pelvis were not accurately taken, but as far as I can judge from having seen it and measured it with my fingers, it was more contracted at the superior aperture than the pelvis of Ellen Gyte (see Plate I.) and there was a sharp bony process on the body of the right os pubis and part of the right os ilium, near the linea innominata: The inferior aperture was not nearly so contracted as that of Ellen Gyte's pelvis (see Plate II), as it would admit of the introduction of my hand without much difficulty."

Case II.

" On the 28th of August 1800 I was requested to attend Sarah Fletcher, a poor woman aged 35, in Marland Work-house, about two miles from Rochdale. I saw her at six o'clock in the morning and learnt she had been in pretty strong labour for twelve hours."

" Upon examination per vaginam, I found the pelvis extremely distorted: The superior aperture was fully as much contracted as that of Susan Holt, upon whom I performed the cesarean section; but there was more space in the inferior aperture. The os uteri was but little dilated and the presentation of the child could not be distinctly perceived. However, after some time the membranes broke and upon a second examination I was satisfied, that it was a breech-presentation. The meconium was afterwards discharged with the pains, which became weaker and less frequent."

" I now endeavoured to introduce my hand per vaginam in order to lay hold of the child; but the dimensions of the pelvis were so much diminished, that I found this impossible and was glad to desist."

" Finding the poor woman's strength beginning to fail, I made a second effort with the blunt hook, which was fixed with great difficulty. However, notwithstanding all my exertions the presenting part could not be brought lower than the brim of the pelvis."

" Every attempt to accomplish her delivery proving fruitless, I contented myself with giving cordials to support her strength and

anodynes to mitigate her pains. She continued to sink rapidly and was seized with convulsions about four o'clock in the afternoon, which soon proved fatal."

" In tracing the history of her complaints I was informed she had enjoyed a good state of health, previously to her marriage, which took place when she was twenty-four years of age. In the course of five years she was the mother of three children: She had natural labours and was delivered by a midwife."

" When pregnant of her third child, she began to complain of pains in her back, loins and hips, which occasioned lameness. After her delivery these complaints kept gradually increasing and she became so weak about the pelvic region, that a false step threw her upon the ground with great violence. After lingering in this miserable situation for about three years, she at length lost almost all power of motion in her lower extremities: The remaining four years of her life were spent either in bed, or in a sitting posture."

" She complained of no pain but in the pelvic region, yet the spine was very much distorted and the sternum projected considerably. Her stature was greatly diminished

and she was much emaciated. During her fourth and last pregnancy the lower extremities broke into ulcers and became edematose."

" Previously to her last pregnancy, her husband had enlisted for a soldier and, after an absence of six years, had paid her a visit on a furlough."

" The body was not examined after death."

Case III.

Ellen Gyte of Ashton-under-Lyne was married at the age of 23 and was delivered of her first child in her 24th year. She bore her second child before she was 25 : In this pregnancy she began to be afflicted with pains especially about her hips and loins, which were supposed to be rheumatic : After the birth of her child she grew very lame, insomuch that she was obliged to walk upon crutches for about two years and to be carried to and from bed. Two years and a quarter afterwards, when she was in her 28th year, she was delivered of her third child. She now began to take a table-spoonful of ling liver oil every night in a tea-cupful of warm ale and her body was rubbed all over

with it once a week. During the first six months she derived no sensible benefit from this plan; but by persisting in it for nearly half a year longer her pains went off and never returned, except from taking cold; she became able to walk without assistance and never afterwards had occasion to use either crutches, or a stick. In short she considered herself as cured by this remedy. She went to her full time of these three children and suckled the two latter. She formerly resided at Castleton in Derbyshire, but had removed from thence five years before her death.

Being arrived at the full time, in her fourth pregnancy, she was attacked with slight labour-pains on Friday, the 5th of December 1800. She was now in the 35th year of her age and her health had of late been good; except sickness in the first months, she had experienced scarcely any complaints.

On Saturday, December 6th, Mr. Southam, who then lived with Mr. Ridgway, was called to her assistance about one o'clock in the morning. He examined her soon after, but being unable to reach the child and having ascertained, that the pelvis was extremely de-

formed, he returned home and informed Mr. R. of these circumstances.

About ten the same morning the membranes broke; Mr. Ridgway and Mr. Southam visited her soon after and found the os uteri dilated to about the size of a half-crown. They could not however reach any part of the child. Mr. S. visited her very frequently in the course of this day and he believes Mr. R. saw her twice.

Mr. Southam was called up to her the night following. The os uteri gradually dilated and he first discovered the presentation of the child to be the head about ten o'clock on Sunday morning.

About eleven in the forenoon of the same day Mr. Ridgway consulted with two of his professional brethren upon the case. They did not exactly agree respecting the dimensions of the pelvis. Mr. R. thought there was a space equal to two inches from the fore to the back part of the pelvis at the superior aperture; one of the other gentlemen thought the distance only about one inch. The use of the perforator and crotchet was proposed; but Mr. Ridgway doubted, whether the delivery could be accomplished by these instruments, and therefore did not

proceed to perforate the child's head, though he believes this might have been done with safety at that time. He recollected the difficulty, that he and Mr. Hall had experienced in delivering Elizabeth Thompson (upon whom the cesarean operation was performed in her next labour in the Lying-in Hospital at Manchester) with the crotchet, and he was certain that her pelvis was not at that time nearly so contracted.

On Sunday night, about eleven o'clock, Mr. Southam brought me a letter from Mr. Ridgway, stating that he had an uncommon case in midwifery and requesting my assistance. I went over to Ashton, as soon as I could, and, after conversing with Mr. Ridgway upon the case, we visited the poor woman. It was then near two o'clock on Monday morning.

She appeared to me to be in a dangerous situation: Her countenance was changed, her strength diminished, her pulse small and frequent, her tongue furred and her abdomen sore and tender. She had vomited on the Saturday and had had several loose stools on the preceding day. She had not made water regularly, but this had been constantly forced away by the labour-pains, so that she did not

complain of either inability or propensity to pass her urine.

On examining her per vaginam, I found the os uteri fully dilated and the head of the fœtus presenting: No part of the cranium was then forced into the superior aperture of the pelvis; but a considerable portion of the scalp had descended into the tube, or cavity of the pelvis. This circumstance, added to the extreme narrowness of the inferior aperture, which rendered it impossible for me to introduce my hand, made it extremely difficult to measure the superior aperture of the pelvis with precision; but I was able to satisfy myself that the diameter, taken from the fore to the back part in the directions B C B D Plate 1st, measured about two inches as Mr. Ridgway supposed, and that the distance from the base of the os sacrum to the symphysis pubis was about an inch more.

From the feel of the scalp and from the circumstance of the meconium's having been forced away early in the labour, I had little doubt but the child had been dead for some time, although the mother thought she had felt it move briskly about three o'clock on Sunday afternoon.

In the consultation, which I held soon afterwards with Mr. Ridgway and Mr. Winterbottom, I intimated that there was little, if any chance of saving the woman by any means whatever; that I believed the child to be dead and that I thought the most eligible practice would be to attempt the delivery by the perforator and crotchet. After a long deliberation we agreed to adopt this plan and about four o'clock that morning, I perforated the head at Mr. Ridgway's request, broke down the texture of the encephalon and scooped it away by means of a spoon and blunt hook. This part of the operation was performed without any material difficulty, the os uteri being fully dilated and the labour-pains sufficiently forcible to keep the head of the child fixed upon the superior aperture. I then returned to Manchester, desiring to be informed, if they should find it impossible to extract the child by the crotchet.

About seven in the evening I received a Note from Mr. Ridgway, acquainting me, that the poor woman was not delivered and that the appearances were very unfavourable. Upon this I immediately went over to Ashton and on my arrival there about nine o'clock, Mr. R. informed me, that the attempts to de-

liver with the crotchet had not succeeded and that the case was hopeless. I soon afterwards met him, Mr. Winterbottom, Mr. Ogden and Mr. Cock at the patient's house. She was then sitting up in a chair and evidently in a state, that precluded all hope of relieving her. Her face was pale and contracted: Her respiration laborious: Her pulse very small and 160 in a minute: She had thrown up a coffee-coloured fluid: Her labour-pains had ceased; but she complained of a fixed pain and soreness of the abdomen: She had a discharge of blood per vaginam and had lost in this way a pound of blood or more. I did not examine her at this visit, nor did any of the other gentlemen. Mr. Winterbottom had examined her about seven o'clock in the evening, and found a portion of the scalp low down in the pelvis and also a large piece of the cranium, which he tried to pull away with his fingers, but not being able to effect it in this way, he did not think it prudent to have recourse to the crotchet; She was not examined by any of the gentlemen afterwards.

In about a quarter of an hour, after I left the room, she died: And, leave having been

obtained to inspect the body, I went over to Ashton the day following and opened the abdomen about five o'clock in the evening, in the presence of Messrs. Ridgway, Winterbottom, Ogden, Cock and Southam.

APPEARANCES ON DISSECTION.

The abdomen was much distended and extremely prominent. On cutting into its cavity a very considerable quantity of gas was discharged and a few ounces of coagulated blood and serum were observed.

The fœtus was found lying in the general cavity of the abdomen, with its head under the false ribs on the left side and the nates to the pubes with one foot in the superior aperture of the pelvis.

The uterus was of the size of a child's head and lay partly behind the fœtus, with the fundus rather more inclined to the right side of the woman. Externally it was in a high state of inflammation, especially at the fundus. Being removed with the whole of the vagina and a longitudinal incision being made through both anteriorly, the uterus was found to be about an inch thick near the fundus, which was the thickest part; and its substance was extremely red. On detaching

the placenta, which still adhered to the womb, a quantity of purulent matter was observed betwixt them, occupying a space of greater extent than a crown-piece. The laceration or rupture, through which the child had been expelled into the abdominal cavity, affected the vagina only, being situated about three inches below the os uteri: It was in a transverse direction, extending across the whole of the posterior part and a portion of the lateral parts of the vagina: On the left side the laceration extended perpendicularly upwards nearly to the os uteri; but the whole substance of the vagina was not here affected, the innermost coat remaining entire. The whole of the vagina was in a highly inflamed, or gangrenous state.

The tubæ fallopianæ were inflamed and gangrenous, whilst the ovaria were perfectly sound.

The peritoneal coat of the vesica urinaria was much inflamed: The internal mucous membrane appeared to be contused and that portion of it, which lined the urethra, was in a state of gangrene.

The texture of the rectum was so much injured, that it tore as easily as a piece of wet

paper, where it entered the upper aperture of the pelvis.

The peritonæum, as investing the cavity of the abdomen, was very much inflamed and all the abdominal viscera, except the liver and spleen, were in a state of high inflammation.

The thorax and head were not examined.

The spine appeared to be but little distorted, although her stature was considerably diminished. Her husband believes she was once five feet three inches high: She was measured after her death and found to be only four feet eight inches in height. Her stature diminished very rapidly indeed after the birth of her third child.

The bones of the pelvis seemed to possess their natural firmness and were not at all moveable at their anterior, or posterior symphyses. The right os innominatum was considerably more distorted than the left. The central parts of the alæ of both ossa ilia were transparent and extremely thin.

Dimensions of the Pelvis.

From the crista of one os ilium to the other, at their most distant points, the pelvis measured 10 inches—From the anterior-

superior spinous processes of one os ilium to the other $7\frac{1}{2}$ inches — From the anterior-inferior spinous processes of one os ilium to the other $5\frac{3}{4}$ inches — The perpendicular height from the apex to the base of the os sacrum was $1\frac{3}{4}$ inch; from the apex of the os sacrum to the top of the 5th lumbar vertebra $3\frac{1}{8}$ inches — The depth of the pelvis laterally was $3\frac{1}{2}$ inches on the left side and $3\frac{1}{8}$ inches on the right side — The depth anteriorly, from the upper to the under margin of the symphysis pubis, was $1\frac{1}{2}$ inch; from the tuberosity of the left os ischium to the under margin of the symphysis pubis, the perpendicular height was $3\frac{1}{4}$ inches; from the tuberosity of the right os ischium to the under margin of the symphysis pubis $2\frac{3}{4}$ inches — The breadth of the os sacrum was $4\frac{3}{10}$ inches.

Superior aperture, see Plate 1st. From the symphysis pubis to the juncture of the 4th and 5th lumbar vertebræ, A B, $3\frac{1}{3}$ inches; to the base of the os sacrum $3\frac{1}{2}$ inches — From the linea innominata of one os ilium to the other, at their most distant points, C D, $4\frac{3}{4}$ inches — From the angle, formed by the curvature of the os pubis, to the juncture of the 4th and 5th lumbar vertebræ,

E B, being the widest part on the right side, $1\frac{7}{8}$ inch: From the same to the same, F B, being the widest part on the left side, $2\frac{1}{4}$ inches—From the anterior to the posterior part of the pelvis, being the narrowest point on the right side, G H, $1\frac{3}{8}$ inch; from before to behind, being the narrowest part of the left side, J K, $1\frac{7}{8}$ inch—From the right sacro-iliac symphysis to the angle of the left os pubis, L F, $4\frac{1}{4}$ inches; to the symphysis pubis, L A, $5\frac{1}{8}$ inches—From the left posterior symphysis to the angle of the right os pubis, M E, $3\frac{1}{2}$ inches; to the symphysis pubis $4\frac{3}{4}$ inches—From the body of the right os pubis to the left, in the direction N F, $\frac{1}{2}$ an inch — The diameter of the largest circle, that could be formed in the superior aperture, was $2\frac{1}{10}$ inches — The space, included by the dotted line on the left side, is equal to the greatest space in Elizabeth Sherwood's pelvis, as this has been stated by Dr. Osborn.

Inferior Aperture, see Plate 2d. From the apex of the os coccygis to the inferior margin of the symphysis pubis, A B, $3\frac{1}{2}$ inches — From the spinous process of one os ischium to the other, C D, nearly $2\frac{5}{8}$ inches — From the spinous process of the left os

ischium to the extremity of the os coccygis, C A, 1 inch: From the spinous process of the right os ischium to the apex of the os coccygis, D A, $1\frac{3}{10}$ inch—From the tuberosity of the os ischium to the sacro-iliac symphysis, on the right side, $4\frac{1}{10}$ inches; on the left side 4 inches—From the tuberosity of the left os ischium to the apex of the os coccygis, E A, 2 inches: From the tuberosity of the right os ischium to the apex of the os coccygis, F A, $2\frac{1}{4}$ inches—From the tuberosity of one os ischium to the other, at their nearest points, a b, nearly 1 inch—From the ramus of one os ischium to the other, at the narrowest part, G H, $\frac{3}{8}$ of an inch—From the ramus of one os pubis to the other, at the widest part, I J, $\frac{3}{4}$ of an inch—From the most distant part of the os sacrum to the symphysis pubis, namely, in the middle of the tubular part of the pelvis, 6 inches.

Dimensions of the Fœtus.

The fœtus was a male, of the full size, excessively putrid and emphysematous. It measured $21\frac{1}{2}$ inches in length and the thorax was 13 inches in circumference under the

arms. From the external canthus of one orbit to that of the other it measured $2\frac{5}{8}$ inches—From the point of the chin to the top of the nose, on a level with the upper margin of the orbits, $1\frac{7}{8}$ inch.

After removing the remainder of the parietal bones and part of the frontal and occipital, the base of the cranium, which was considerably softened and broken, passed without difficulty through the pelvis, when divested of the vagina, rectum and other parts, diminishing its capacity.

The weight of the fœtus was not ascertained.

REMARKS.

The case of Kinnerley leads me to make the following observations.

1st. The progress of the disease of her bones was unusually rapid. It does not appear to have taken place till her last pregnancy and in a few months it had deprived her of the power of walking without assistance. At the end of nine months her constitution was very much impaired and her pelvis for the time very much contracted.

2dly. The rupture or laceration of the womb does not seem to have produced any

immediate and alarming effects, insomuch that it is not easy to ascertain exactly when it took place; although there is reason to believe from the cessation of the labour pains and the attack of vomiting and purging with gripings, that it happened about the time when the membranes broke.

3dly. This case furnishes an additional proof of the irreparable injury, that may be done in a very short time by the pains of labour, where the pelvis is much distorted, and especially where the sharp bony ridge, or process, exists, of which Dr. Garthshore has taken notice (1).

4thly. As the child was found completely envelopped in coagulating lymph, it would appear that, if this poor woman's life could have been preserved for a sufficient length of time, the child would have been included in a distinct sac and might have been extracted through an ulceration, or incision of the abdominal parietes, without exposing any of the viscera.

In the case of Sarah Fletcher, the affection of the bones took place, when she was about

(1) See Medical Journal, Vol. 8th, or my Second Letter to Simmons, p. 210.

28 years of age, and in the space of seven years her pelvis was become so much distorted as to render delivery per vaginam impracticable. In Kinnerley the complaint came on at a later, in Gyte at an earlier age and I know a poor woman, in whom it came on before her 20th year.

It has frequently happened, that one or more labours, after the attack of malacosteon, have been easy and natural; that in one or more of the subsequent ones delivery has been practicable, by means of the perforator and crotchet, and that the patient has afterwards died of this disease independently on labour, or, having been taken in labour, has died undelivered, or soon after her delivery, whether this has been effected by hysterotomy or by the section of the symphysis pubis. A similar train of circumstances would, in all probability, have taken place in this poor woman, if her husband had not left her for so long a time; for it seems reasonable to expect, that she might have conceived several times in these six years, might have had one or more easy labours and might have been delivered once or oftener by the crotchet, before the capacity of her pelvis was so much

diminished as to render her delivery by this instrument impracticable.

Her condition was become so miserable and wretched, that she could not have been expected to live much longer than she did, if she had not been impregnated for the fourth time: And having arrived at the full period of utero-gestation, it seems to have been impossible to deliver her, whatever might have been the position of the fœtus, except by the cesarean operation, or the section of the symphysis pubis. Every professional man must, I think, be satisfied, that the life of this woman could not have been preserved by eithe of these means and therefore that the preference was due to the former, as more likely to have saved her child, if she could have been prevailed upon to submit to it at the commencement of her labour.

One circumstance in this case is too remarkable to be passed over unnoticed, namely, that she should have died in labour, in less than 22 hours. Great mischief, we know both from the preceding and other cases, may be done to the abdominal and pelvis viscera in a shorter period; but how far these viscera were injured in this instance, we have

no means of judging, as the body was not opened.

The 3d case is peculiarly interesting and I am induced to make several observations upon it.

1st. As Ellen Gyte had not been examined after the rupture of the vagina and consequent escape of the fœtus from the womb, it was a matter of great surprize to us all to find the child in the general cavity of the abdomen and its position completely reversed.—However as the head of the fœtus must have passed first through the lacerated wound, it must necessarily have ascended towards the superior part of the abdominal cavity, otherwise the trunk and inferior extremities could not have been excluded from the uterus.

2dly. It may appear singular at first sight, that the rupture of the vagina should have been situated so far below the os uteri as three inches; a circumstance, which, I apprehend, may be thus accounted for. The labour-pains being pretty strong, the uterus was enabled to expel the presenting part of the child through its orifice and to elongate the vagina in the same proportion, as its own cavity became shortened, because the head could not descend below, or even enter into

the superior aperture of the pelvis. The head continuing to be pressed against the parietes of the vagina, lining the superior aperture of the pelvis, whilst the vagina was forcibly pulled upwards by the contractions of the uterus during every pain, the texture of the former must have become materially injured, where it was in contact with this irregular bony ring, and at length forced to give way in this part.

3dly. The antero-posterior diameter of the superior aperture of this poor woman's pelvis was much greater than that, which Dr. Osborn has stated to be sufficient for admitting of delivery by the crotchet, with perfect safety to the mother, and yet it was found impracticable to deliver her with this instrument. It may be contended, however, that Ellen Gyte might have been delivered, and her life preserved by proceeding exactly in the manner recommended by Dr. Osborn, that is, by opening the head of the child at the beginning of the labour and deferring every attempt to extract it for thirty hours, that the body might be softened by putrefaction: But this I very much doubt. The head could not have been perforated with safety before Sunday morning about 10 o'clock (forty-six hours after the la-

bour commenced) and if it had been done at that time and the patient left to herself for 30 hours, every attempt to extract the child would of course have been deferred till two o'clock on Monday afternoon; at which time, in all probability, the woman's life would have been in as much danger as it was, when the attempt to deliver by the crotchet was made. And in the 2d place, the fœtus was in a state as favourable to extraction, admitting Dr. Osborn's own principle, when Mr. Ogden &c. began to use the crotchet, as if the perforation of the head had been made thirty hours before, the body being in such a highly putrid state as to leave no doubt of the child's death having taken place before 10 o'clock on Sunday morning. If therefore any advantage could have been gained in this case, from proceeding in the manner recommended by Dr. Osborn, it must have been derived from this circumstance solely, that the pressure on the vagina, rectum and bladder, would have been made by the evacuated fetal head, instead of the entire head, and it may be questioned, whether the pressure of the mutilated head would have done less mischief.

The difficulty of using the crotchet in this case was very much increased, from the contracted state of the inferior aperture and the depth of the pelvis anteriorly. Had the pelvis been more open in this part, I am of opinion that the fœtus might have been extracted by the crotchet, though not without doing considerable injury to the mother. The soft parts, lining the cavity of the pelvis, must necessarily be much contused by bringing down the head of the child, whenever there is so much irregularity and contraction at the superior aperture, as is found to exist in this pelvis.

4thly. As the termination of this case was as unfortunate as possible, it may be proper to enquire how an accoucheur should proceed to obtain more success, if he meet with a patient who has a pelvis similarly and equally distorted?

This question may be considered in three points of view.

1st. Where there is great reason to believe the fœtus to be alive.

2dly. Where the child is known, or with great reason believed, to be dead and the mother has not apparently sustained any material injury of the abdominal or pelvis viscera.

3dly. Where the child is believed to be dead and the parent is already in very considerable danger.

In the first of these supposed cases, I am decidedly of opinion, that hysterotomy should be practised, whatever may be the situation of the mother. For we are not justified, I think, in destroying a child in utero, without very good reason to believe, that we can by this mean preserve the life of the mother, and here, when we have destroyed the child, we are not certain, that we can accomplish the delivery by the crotchet, much less that we can save the life of the parent. Whereas, if the child be alive, when the cesarean section is performed, we shall almost to a certainty preserve it and may give the mother as good a chance by this operation as by the crotchet.

In the second case, it may be more difficult to determine, which of these two operations we should have recourse to. Hysterotomy will have this circumstance to recommend it, that the operator may be sure of effecting the delivery and may have some expectation of preserving the mother by it, where the constitution is not much impaired and the progress of Malacosteon appears to be stopped, as in the case of Ellen Gyte. Whilst consi-

derable doubts must exist in his mind, whether it be practicable to accomplish the delivery even by the perforator and crotchet. If, however, the latter mode should be adopted and prove insufficient, the section of the symphysis pubis might afterwards be resorted to and, though the pelvis be particularly contracted at the inferior aperture in the case under consideration, the tuberosities of the ossa ischia might perhaps be sufficiently separated to admit of the delivery of the woman, without tearing the posterior or sacro-iliac symphyses. It may be doubted, however, if embryulcia followed by the section of the symphysis pubis would not prove fatal to the mother in a greater proportion of instances than hysterotomy.

In the 3d case, the accoucheur can have no expectation of saving the child and can entertain but little hope of preserving the mother, either by hysterotomy, or the crotchet : But, since recoveries occasionally happen under circumstances almost hopeless, the delivery should, I think, be attempted. It was on this ground and because the dimensions of the superior aperture of the pelvis seemed sufficiently large to allow the passage of a moderate-sized fetal head, after

the reduction of its bulk by the crotchet, that I recommended an attempt to be made to deliver Ellen Gyte and the use of the perforator and crotchet in preference to hysterotomy: Although I could not venture to declare positively, that the delivery could be accomplished by means of those instruments. I wished the practicability, or impracticability of delivering her by the crotchet to be ascertained and it affords me some satisfaction, that Mr. Ogden, who is a declared opponent of the cesarean operation* and had recommended the use of the crotchet to Mr. Ridgway at the consultation, attempted to deliver her with it.

5thly. It appears from the case of Ellen Gyte, that the softness of the bones, affecting adults, is not an absolutely incurable disease. There is reason to believe, that if she had escaped impregnation, she would neither have died of Malacosteon, nor of its consequences. Hence I am encouraged to consider the cure &c, of this disease in the succeeding section.

* See Medical and Physical Journal, Vol. 2. p. 479.

SECTION III.

ON THE CAUSES, CURE AND PREVENTION OF MALACOSTEON.

Previously to entering upon the consideration of the remedies, likely to prove beneficial in this complaint, I shall take a view of the composition of bone, which has been of late fully ascertained by Mr. Hatchett's and M. Merat-Guillot's analyses.

In a valuable paper, entitled *Experiments and Observations on Shell and Bone*, published in the Philosophical Transactions for the year 1799, Part II, Art. 18, Mr. Hatchett has shewn, that the constituent parts of bone are cartilage or membrane, phosphate, carbonate and sulphate of lime. He has pointed out, that the phosphate of lime is in large and the carbonate and sulphate of lime in very small quantity: But he has not determined the exact proportions of each of these substances. This defect has been supplied by Merat-Guillot, in a paper printed in the 34th Vol. of the Annales de Chimie p. 68 &c. He has analysed the bones, shells, crusts &c, of different animals and given a very interesting table of the results; a translation of which I shall here adduce.

Names of the substances employed.	Proportions of Gelatine.	Proportions of Phosphate of Lime.	Proportions of Carbonate of Lime.	Loss.
Human Bones from a burial ground....	16	67	1.5	15.5
Dry human Bones that had not been buried	23	63	2	2 (12 ?)
Bone of an ox.....	3	93	2	2
..... a calf.....	25	54	trace	21
..... horse.....	9	67.5	1.25	22.25
Teeth of a horse.....	12	85.5	0.25	2.25
..... an elephant, *or* ivory.....	24	64	0.1	11.15
Bone of a sheep.....	16	70	0.5	13.5
..... an elk	1.5	90	1	7.5
Hart's horn.....	27	57.5	1	14.5
Bone of a hog	17	52	1	30
..... hare	9	85	1	5
..... chicken ...	6	72	1.5	20.5
Egg shells.....	3	2	72	23
Bone of a pike	12	64	1	23
..... carp	6	45	0.5	48.5
..... viper	21.5	60.5	0.5	17.5
..... lobster	18	14	40	28
Mother of pearl.....	2.5	0	66	31.5
Crab's eyes.....	2	12	60	26
White coral	1.5	0	50	48.5
Red coral.....	0.5	0	53.5	46
Jointed coralline	7.5	0	49	43.5
Cuttlefish bone	8	0	68	24

It may be proper to observe, that Merat-Guillot always analysed 100 parts and that all the products, of which he has determined the quantities, were dried as much as possible —The loss sustained during the analysis of each of the substances, mentioned in the table, is presumed by the author to be water chiefly ; but he thinks that a portion of gelatine was lost and there was a small quantity of saline matter, which he did not examine. He seems to have overlooked the minute quantity of sulphate of lime, which Mr. Hatchett's experiments have proved to be an ingredient of bone.

From the very different proportion of the phosphate of lime to the other ingredients in the bones of an ox and a calf, we may presume, that a similar disproportion obtains in the bones of man (and other animals) in the infantile and adult periods of life, consistently with perfect health : And we are assured, that a still greater defect of phosphate of lime takes place in human bones, in consequence of disease. In some very bad cases, both of ricketts (1) and malacosteon (2), the ossify-

(1) See Halleri Disput. ad Morb. Hist. &c. T. VI. p. 281. (2) See Gooch's Surgery Vol. II. p. 397 &c. and Bromfield's Surg. Vol. II.

ing substances have been almost entirely removed and the cartilaginous base even of the bones has in some instances been materially changed, so that they possessed much less firmness than sound bones, from which the earthy salts have been extracted by maceration in the acetous, nitric or muriatic acids. The bones of Mary Hayes, whose case is related in the 48th Vol. of the Phil. Trans., presented less resistance to the knife " than firm muscular flesh would have made, being changed into a kind of parenchymous substance, like soft dark-coloured liver, only meeting here and there with bony laminæ, thin as an egg shell," P. 300—And Mr. S. Bevan has given a very remarkable case of softness of the bones in an adult female, from which the following extract is taken: " Upon making incisions in her legs and arms, five or six inches long, I found the outer laminæ of the bones soft and become perfectly membranous, about the thickness of the peritonæum, containing (instead of a bony substance) a fluid of the consistence of honey when it is thick, of a reddish colour, not at all disagreeable to the smell: There was no appearance of any bones in her legs and arms, except near the joints, which

were in part dissolved and what remained were very soft and full of holes like a honeycomb: Also the bones of the head would easily give way to the pressure of the finger. It is remarkable, that those parts of the bones, that are the most compact and hard, were first dissolved, while their heads, which are more spongy and soft, had not so entirely lost their substance." *Phil. Trans. abr. Vol.* 9. p. 252.

The health of children, affected with Rachitis, has in innumerable instances been re-established and their bones have acquired the proper hardness and solidity, the curvature and deformity in some instances remaining and in others being corrected or removed: But that of adults, labouring under Malacosteon, has rarely been restored, at least where the disease has made much progress. The only instance that I know of, wherein the progress of this disease was effectually suspended, is the case of Ellen Gyte.

The cure of Rachitis has generally been effected by strengthening remedies, as nourishing food, free exposure to pure air, cold or tepid bathing, tonics &c: Oyster shells have also been strongly recommended in this complaint, in doses of a scruple or half a

drachm two or three times a day by De Haen; but the phosphate of lime, which is the principal ingredient of bone, has not, I believe, been exhibited till within these few years, with the view of supplying the system with ossific matter.

M. Bonhomme, in a Memoir (1) read to the National Society of Medicine at Paris, has recommended the internal use of the phosphates of lime and soda and the external use of a solution of potash, for the cure of ricketts, and he has related several cases, wherein these remedies were employed with advantage. He considers this disease, as depending on the one hand upon a defect of the phosphoric acid and on the other hand upon the development of an acid, approaching in its properties to the vegetable acids, particularly the oxalic. He thinks that, in consequence of a defect of bile in ricketty patients, this acid is developped in the primæ viæ, enteres the blood, disturbs the circulation and attacks and softens the bones. He has not however given any absolute proofs of

(1) See an analysis of this Memoir by Hallé, in the 13th Vol of the Annales de Chimie for August 1793, or a translation of it in the 1st Vol. of Nicholson's Journal.

the existence of this rachitic acid in the blood-vessels, nor indeed has he rendered it probable (1).

Having endeavoured to establish these two propositions, 1. That there is a deficiency of phosphate of lime in the bones of ricketty patients; 2. That the development of the oxalic acid is the cause of this alteration, he concludes that the treatment of ricketts ought to turn on these two principal points, viz. to

(1) According to Fourcroy and Vauquelin oxalate of lime is one of the most common ingredients of urinary calculi: They found it in the proportion of one sixth in the number that they examined: The calculi, resembling mulberries in their form, are composed of this oxalate and an agglutinating animal matter. But they never could discover the oxalic acid present in the urine in a disengaged state. The smallest quantity of this acid, poured into urine, gives an abundant precipitate of oxalate of lime, which proves to them, that an acid of this kind cannot remain dissolved in the urine. They consider the production of oxalic acid as preternatural and morbific and are of opinion, that when a mulberry-shaped calculus is formed, its production takes place at the moment even of the formation of oxalic acid. There is reason to believe, say they, that some urines, which are white and muddy when made, are charged with oxalate of lime, and that this salt, formed by a cause entirely unknown, thus passes out of the body without producing calculi. See Ann. de Chimie Tom. 31. p. 64.

"*prevent the development of oxalic acid and re-establish the combination of the phosphoric acid with the base of bones—a combination, to which alone they owe their solidity.*" He concludes from some experiments, made upon fowls of the same incubation, that the phosphate of lime does pass from the stomach and intestines into the blood vessels and promote the progress of ossification. He fed some young chickens with their ordinary food; to others he gave a quantity of phosphate of lime mixed with their food; about two months after he killed them and found that the bones of those fowls, which were regularly fed with a mixture of calcareous phosphate, were evidently more solid and their epiphyses much less perceptible than those of the other fowls. His experiments with the phosphate of lime upon ricketty infants, whether exhibited alone or joined with phosphate of soda, convince him, that it contributes powerfully to the restoration of the natural proportions of the ingredients of bones and to the acceleration of the cure of the disease.

Admitting the theory of ricketts, given by M. Bonhomme, to be well founded, the phosphate of lime appears to be a very appro-

priate remedy; for the oxalic acid, attracting lime more strongly than the phosphoric acid, may decompose the phosphate of lime in the primæ viæ and be prevented from acting upon the phosphate of lime, either as mixed with the circulating fluids, or as deposited in the bones; whilst the deficiency of phosphoric acid in the system may at the same time be supplied. And the acetous acid, that is formed in the alimentary canal of ricketty children, may there become saturated with the phosphate of lime and be prevented from dissolving this substance in any other part of the system. If this theory be rejected, his experiments and observations may still seem to shew the utility of his practice in this disease and the propriety of extending it to the treatment of adults, afflicted with malacosteon.

The urine of patients, labouring under the latter disease, has been observed to deposit a copious white sediment ([1]), which has been supposed to be the earth of bones. Dr. Hosty informs us in his account of the case of Supiot, that the sediment was cre-

([1]) See the cases of Mad. Supiot, of James Stevenson (Lond. Med. Obs. and Inq. Vol. 5) &c.

taceous and fermented gently with acids (1). And M. Sue, speaking of the same patient, says " from the analysis, that I made of this sediment, I had all the reason in the world

(1) See Phil. Trans. Vol. 48 p. 28 — If this sediment fermented with acids soon after the urine was made, it shews that there was carbonate of lime in it: But if the experiment were not made till some time after, the slight fermentation might arise from the presence of carbonate of ammonia. When experiments are made upon human urine with the view of ascertaining its contents, they should be made whilst it is recent; for recent urine differs very widely from urine that has fermented.

Recent urine, according to the experiments of Fourcroy and Vauquelin, who have analysed it with great care, contains 1. Acid phosphate of lime; forming from $\frac{1}{960}$ to $\frac{1}{700}$ part of the urine; the phosphate may be precipitated by the addition of alkalis, which combine with its excess of acid. 2. Phosphate of magnesia. 3. Phosphate of soda. 4. Phosphate of ammonia. 5. Uric acid, formerly named improperly lithic acid. 6. Benzoic acid. 7. Muriate of soda. 8. Muriate of ammonia. 9. Gelatine and albumen. 10. Urée, which constitutes about $\frac{1}{2}\frac{9}{0}$ of the matter contained in urine and imparts to it its smell and other characteristic properties —— Besides these true and constant materials of human urine, it contains accidentally, but rarely, sulphate of soda, muriate of potash, sulphate of lime, oxalate of lime and silex.

Putrid urine contains 1. Ammonia in excess. 2. Carbonate of ammonia. 3. Phosphate of ammonia. 4. Ammoniaco-magnesian phosphate. 5. Urate of ammonia

to believe, that it was no other than the very substance of the bones dissolved" (1). It has not, however, been fully ascertained, whether the white earthy sediment, deposited by the urine of these patients, be carbonate of lime, phosphate of lime, or oxalate of lime &c.: And as an accurate analysis of their urine, bones (2) and blood might throw considerable light upon the proximate cause of this disease, I should wish to see it executed by some able chemists.

We have no good reason to believe that the oxalic, or acetous acid ever prevails in the fluids of patients afflicted with Malacosteon *adultorum*, much less that an acid of this kind acts upon their bones, dissolving the lime, which enters into their composition, and rendering them softer and yielding. It

6. Acetite of ammonia. 7. Benzoate of ammonia. 8. Muriate of ammonia. 9. Muriate of soda. 10. Gelatine and albumen. 11. Phosphate of lime: But the two last substances are precipitated—See Ann. de Chimie T. 31. p. 48—71.

(1) See Bromfield's Surgery. V. 2. p. 39.

(2) The bones of Mary Hayes, mentioned above, were examined by an ingenious chemist, who could neither discover an acid, nor an alkali in them, according to Gooch.

has never been shewn by experiment, I believe, that the blood contains either these or any other acid uncombined. The urine of a healthy person, however, does contain a minute quantity of phosphoric acid in a free state, which renders the phosphate of lime soluble in this fluid (1); but this disengaged portion of phosphoric acid appears to be formed in the urine, consequently cannot act upon the bones; and it has not been shewn even, that the urine of these patients does contain an unusual quantity of phosphoric acid in an uncombined state.

Hence I am led to suspect, that the deficiency of terreo-saline ingredients in the bones, in cases of Malacosteon, arises from an increased absorption of these substances, independently of any solution, or decomposition of them by the oxalic, acetous, phosphoric, or any other acid; and in *Rachitis*, from a diminished deposition of these sub-

(1) Phosphoric acid, obtained from burnt bones by means of the sulphuric acid scarcely acts at all upon phosphate of lime, but this acid is very impure; it holds in solution a quantity of the sulphate of lime, formed by the combination of sulphuric acid with the lime of the bones. See a Memoir on the Phosphate of Lime by M. Ekeberg, in the Ann. de Chim. Tome 32. p. 230 & s.

stances. In some very bad cases, however, it is probable that the secretion of ossifying substances may be lessened and the absorption of them increased in the bones at the same time: And, as has been intimated above, even the cartilaginous or membranous base of the bones has been sometimes removed, or very much altered in its texture.—Perhaps in some cases of Malacosteon, the lime, entering into the composition of the bones, undergoes a decomposition.

From this view of the proximate cause of *Rachitis* a principal curative indication seems to be to *increase the secretion and deposition of the phosphate and carbonate and sulphate of lime in the bones;* and one mean of fulfilling this indication may be to exhibit the above mentioned ossifying substances, or their elements; for I apprehend that a sufficient quantity of these earthy salts, or of their elements, is not introduced into, or generated in, the blood of ricketty patients.

From the view of Malacosteon given above, the principal indications appear to be, *to diminish the absorption of the terreo-saline ingredients of bone, or to increase the deposition of them.* But, being totally unacquainted

with the means of fulfilling either of these indications *directly*, I can only hope to point out such remedies as may *indirectly* restore the balance of deposition and absorption of ossific matter; relieve urgent symptoms; and prevent or diminish deformity.

The curative and palliative indications, with the means of satisfying them, which I have to propose, are the following:

1. *To support and increase the vigour of the system*, by a nutritious diet, moderate exercise, free air, cold or tepid bathing, tonics &c.

2. *To supply the system with the substances, that enter into the composition of bone and give them their firmness.* For this purpose we may give burnt bones or burnt hart's horn, finely powdered, or phosphate of lime formed by the mixture of phosphate of soda and muriate of lime, which has the advantage of being more finely divided than can be done by mechanical means: Or we may exhibit phosphoric acid and limewater in succession; or phosphate of lime dissolved in the phosphoric, acetous, or muriatic acid and afterwards limewater; or we may give phosphate of soda and afterwards muriate of lime. The administration of these remedies may not appear so likely to prove serviceable in this disease,

as in *Rachitis*; but, as a portion of the phosphate of lime &c. has been already carried out of the system, the introduction of an additional quantity seems necessary to supply this defect.

3. *To relieve pain* by internal remedies, as opium, and by external applications, as stimulating embrocations, blistering, issues &c —Perhaps issues and blisters may also prove beneficial by changing the diseased action of the vessels of the part, as in cases of the curvature of the spine, producing paralysis of the extremities. It is scarcely necessary to point out the means of relieving other urgent symptoms.

4. *To prevent deformity, or to redress or lessen the distortion of the bones, that has already taken place.*

This is to be effected by a recumbent posture, by the use of crutches, or a chair with stuffed moveable arms and other mechanical contrivances *. When the patient is a child-bearing female, this indication ought to be particularly attended to.

5. As the ling liver oil was the only remedy, which Gyte used and to which she attri-

* See Darwin's Zoonomia, Vol. II. page 89.

buted her cure, it may be given upon an empirical ground; for I do not pretend to explain its modus operandi, or to determine whether it possesses any advantages over other animal oils. My friend Dr. Barton has mentioned the oleum scatinæ or raiæ as applied externally with advantage to ricketty children in the north of Scotland (1).

These means ought to be diligently employed, as soon as the disease is ascertained; otherwise, though we should succeed in curing it, the deformity may be permanent and, when it occurs in a female, by impeding parturition may prove destructive to her, or her infant, or both as in the case of Ellen Gyte.

Malacosteon generally proving fatal and its destructive effects in many instances being extended to another life, besides that of the

(1) Nec reticendum est, quod Doctor Moore in sua Diss. Inaug. protulit: Is refert oleum scatinæ, seu raiæ, corpori inunctum in plagis Scotiæ septentrionalibus multum profuisse." De Rachitide p. 44—Perhaps, as the urine of horses and other graminivorous animals contains no phosphoric acid either disengaged, or combined with lime, but an acid of a vegetable nature, which has been proved by Vauquelin and Fourcroy to be the benzoic, the additional quantity of animal matter, introduced by exhibiting ling-liver oil, may supply an increased proportion of phosphoric acid to the system.

patient labouring under it, the prevention of it is an object of great importance: And, as every rational attempt to prevent the disease must be founded on a knowledge of its remote causes, I shall in the next place offer a few observations upon these.

In some instances this affection of the bones has been preceded by Diabetes, Siphilis, Scorbutus, Rheumatismus &c, and hence it has been supposed, that these diseases have given occasion to it by inducing a particular acrimony of the fluids. The opinion of a general acrimony of the fluids being an exciting cause of this malady has received further support from the observation, that some of this unfortunate class of patients had previously indulged in the use of an uncommon quantity of saline substances, as salt, or vinegar. Supiot for two years before the attack usually eat a pound, or a pound and a half of common salt in a week, without any vehicle, as we are informed by M. Sue.

It is not my intention to enter further into the consideration of an acrimonious state of the blood, as a remote cause of this disease, or to point out the means of preventing the production of it from this source. There are two circumstances, which independently of

acrimony appear to me to be the most common remote causes of Malacosteon, namely pregnancy and nursing. Upon these I think it necessary to dwell longer.

A very great proportion of the persons afflicted with this disease, especially its most common form (see Malacosteon *adultorum*, var. β in the next section), have been females in a low situation and who have had children in quick succession: This circumstance may, I think, be satisfactorily accounted for in the following manner. During pregnancy the appetite and digestion are very frequently impaired, whence the soft parts of the body are perceptibly wasted and, as the fœtus derives its whole supply of ossifying matters from the mother, I suspect that she is frequently deprived of a portion of these, which is necessary for her own system. The lameness, to which some pregnant women are subject in the latter months, is not, I think, wholly imputable to the pressure of the gravid uterus; but is partly to be attributed to the cause above mentioned. The slowness of union, or the total indisposition to unite, that has been often observed in the fractured bones of pregnant women seems to furnish another argument: And, as a further

proof it may be observed, that malacosteon, which had made a rapid progress during the latter months of pregnancy and for some time after parturition, has in many instances been checked, or suspended in the intervals of pregnancy and nursing. It is a curious fact, that the bones in the vicinity of the uterus, those of the spine and pelvis for example, suffer more frequently and in greater proportion, than the bones of the extremities.

A woman, whose child is entirely supported by the breast, may be considered in some measure, as in a similar predicament with a pregnant woman: For her suck (1) supplies the infant with every particle of phosphate &c of lime, that is received into its system. And, if she be sickly, or ill fed, this would appear to be done at an expence,

(1) Fourcroy has discovered, that the serosity of human milk is most charged with calcareous phosphate immediately after parturition and that the proportion of this substance gradually decreases, whilst the other nutritive parts, of which it is composed, are augmented in an inverse ratio. See Ann. de Chim. T. 18. p. 135 & s.—— This circumstance shews the impropriety of allowing ricketty children to remain too long at the breast and the preference to be given to a nurse, who has been but lately delivered, for a young infant.

which her own bones cannot bear without injury.

A female, who gives suck during her pregnancy and is at the same time indisposed or ill fed, which is not uncommon amongst the lower classes, must suffer in a still greater degree from the expenditure of ossific matter.

When a woman does not breed very quickly and her health is unimpaired, there is reason to believe that the proportion of phosphate of lime, of which she has been deprived during pregnancy and nursing, is either not derived from her bones, or, if taken from thence, is soon restored. But, when a woman has children in quick succession, or gives suck during the greatest part of the intervals of pregnancy, the loss of ossific matter in some instances appears to be never restored. The proper balance, betwixt the secretion of phosphate, carbonate and sulphate of lime in the bones and its absorption from thence, seems to be never re-established. The disease continues its progress, till the patient is destroyed by it, or till she dies in consequence of difficult parturition from the deformity, which it has produced in the pelvis.

From the above view of the origin of this variety of the disease in females, the means of prevention are obviously these.

1. To prevent too frequent conception.

2. To avoid nursing, or to shorten the period.

3. To support the strength by nutritious diet &c.

4. To exhibit the phosphate of lime ready formed, or its constituent parts, during pregnancy and nursing.

SECTION IV.

OF THE CHARACTERS, SYNONYMS &C OF MALACOSTEON AND ITS SPECIES.

Dr. Cullen has not given any place to the softness of the bones, occurring in adults, in his Nosologia Methodica. He has not even enumerated it in the Catalogue of diseases, which he intimates ought not to have been omitted by him.

It has, however, a place assigned to it in the nosological systems of Sauvages, Vogel, Sagar, Macbride, Selle, Daniel and Ploucquet, and by some practical writers, as will be seen from the references given hereafter.

Since Rachitis and Malacosteon agree in many of their symptoms and since the diver-

sity, observable in them, depends principally upon the states of the system at the different periods of life, in which these diseases make their appearance, I am of opinion that they are properly referrible to the same genus.

By Cullen Rachitis is referred to the third class and third order of his system, *Cachexiæ —Intumescentiæ.* But, if we take the character of this genus, as given by himself, viz. " Caput magnum anterius maxime tumens; genicula tumida; costæ depressæ; abdomen tumidum; *cætera marcescentia.*" Tom. II. p. 289, it would appear, that Rachitis may without impropriety be placed in the *first* order of the third class, *Marcores;* and, when Malacosteon is associated with Rachitis, so as to constitute one genus, it would be obviously improper to refer this genus to the *Intumescentiæ* of Cullen, whilst it may be very well arranged in the order *Marcores,* more properly indeed than in the order *Dyscinesiæ,* or any other part of his system.

I propose therefore to include these two diseases (1) under one genus, to which I shall give the name of Malacosteon, as expressive of the leading circumstance; and to

(1) Dr. Denman refers them both to Rachitis in his Introduction to Midwifery. Vol. II. p. 16.

refer it to the *Cachexiæ—Marcores* of our celebrated british nosologist, with the following character, synonyms &c.

MALACOSTEON. *Vogel* — Osteosarcosis *Macbride* — Rachitis *Sauv. Linn.* &c &c. — Astheniæ, Ostocopi, Rachialgiæ species *Sauv.*—Astheniæ, Osteocopi spec. *Sagar*— Osteocachexiæ spec. *Daniel.*

Debility; lameness; distortion, or deformity, independently of external violence.

1. MALACOSTEON *Rachitis.*

Attacking infants; epiphyses of the cylindrical bones larger than natural; limbs weak, flaccid, bent; head and belly enlarged.

Rachitis *Culleni Syn. Nos. Meth.* T. II. p. 289—*Linnæi Gen. Morb.* 212—*Vogelii Defin. Gen. Morb.* 523—*Sagari Syst. Morb. Sympt.* p. 174—*Sellii Rudim. Pyr.* &c. p. 375 & *Lib. de cur. hom. morbis* p. 223—*Glisson de Rach.*—*Boerh. Aphor.* § 1480—*Van Swieten Comm.* V. p. 578—*Hoffman.* III. p. 487—*Seviani della cura* &c — *Buchner* in Halleri Disput. ad Morb. Hist. &c VI — *Callisen Princ. Syst. Chir. Hod.* II. p. 646—*Barton Diss. Med. Inaug.* Edinb. 1786— *Cullen's First Lines* &c. IV. p. 332—*Bonhomme in Ann. de Chimie.* T. 18—*Hevin Cours de Path. & Thérap-Chirurg.* T. II. p. 465—*Darwin's Zoonomia.* II. p. 87.

The Varieties of this species are

α. Simple, unaccompanied by any other disease—Var. 1. Cullen—R. nodosa & Britannica *Sauv.* Tom. II. p. 539. *Sagar.* p. 174.

β. Complicated, occurring with some other disease—Var. 2. Cullen—R. strumosa, polonica, elephantiaca. *Sauv.*

II. 541—R. strumosa, polonica & elephantina *Sagar.* p. 174, 175.

Description. Peculiar to infants, scarcely attacking them before the sixth month, or after the second year; continuing till the third year sometimes; more rarely till the sixth, or later. Whole body emaciated and debilitated, with paleness and flaccidity —— Head unusually large; forehead prominent; fontanelles wide; teeth late and slow in appearing, soon turning black, becoming carious and falling out: Capacity for the most part acute and forward, sometimes dull—Trunk deformed; clavicles distorted; ribs flattened or pressed inwards; sternum mostly projecting; spine distorted in different parts and in various ways; form of the pelvis changed (1); belly tumefied; dyspnœa; appetite sometimes voracious, rarely impaired; fæces generally whitish and liquid — Limbs curved; epiphyses of the ulna, radius, tibia and fibula, especially the lower ones, larger than natural and spongy *. Lameness; aversion to motion; difficulty or inability of standing or walking. The pulse at first scarcely affected; as the disease advances, becoming weaker and more frequent; the digestion and other functions at length more or less disturbed.

On dissection the abdominal viscera have been found unusually large; the mesentery filled with tubercles; the lungs adhering to the pleura and tubercular; the bones softened: the muscles whiter, more tender and flaccid.

(1) See Plates 4, 5, & 6.

* A figure of a girl, extremely distorted in consequence of M. *Rachitis*, may be seen in Haller's Disput. ad Morb. Hist. &c. T. VI. tab. 28.

2. Malacosteon *adultorum.*

Seizing adults; pains of the spine, pelvis or limbs; deformity of the trunk, or limbs; diminution of stature.

Asthenia ab osteosarcosi, *Sauv.* Tom. II. p. 804.

Ostocopus ab osteosarcosi, *Sauv.* T. II. p. 28.

Rachialgia osteosarcosis, *Sauv.* T. II. p. 137.

Osteocopus sarcomaticus, *Sagar.* p. 218.

Asthenia osteosarcosis, *Sagar.* p. 531.

Cachexiæ malacia *Ploucquet Delin. Syst. Nos.* T. II. p. 16.

Osteosarcosis *Sigwartii Dissert.* &c. Tub. 1781 — *Denman's* Introduct. to Midwifery, p. 16.

Innutritio ossium, *Darwin's Zoonomia.* II. p. 84.

Spinæ distortio. *Ibid.* p. 87.

Malacosteon *Hull's Defence of the Cesarean Operation* p. 172, 188 &c—*Hull's Observations on Mr. Simmons's Detection &c.* p. 192 &c — *Mr. Wood's Account of the Case of Elizabeth Thompson, Append. to the 5th vol. of Mem. of the Med. Soc.*

Mollities ossium *Boehmeri Diss.* &c. Hal. 1763 — *Bromfield's Surgery.* II. p. 25 — *Dr. Cooper in Med. Obs. & Inq.* Vol. 5. 217.

Mollesse des os *Hevin Cours de Path. & Thérap. Chir.* II. p. 463.

Softness, flexibility &c of the bones *Phil. Trans. abr.* Vol. IX; *Phil. Trans.* Vol. 48. p. 26 & 297—*Gooch's Surgery.* II. p. 293—*Thompson in Med. Obs. & Inq.* V. p. 259. *Vaughan on the Hydrophobia* &c. p. 61—*Hamilton's Outlines of Midwifery.* p. 273. p. 304 &c—*Welchman in London Med. Journal for* 1790.

Var. α. Universal, affecting all, or most of the bones—This is very rare.

β. Partial, affecting the spine, or pelvis, or both; rarely extending to the limbs—This is not uncommon; it occurs principally, if not solely in women.

γ. Partial, affecting a single limb only.

Description. Generally attacking adults, rarely appearing before puberty. Emaciation and debility of the whole body. Pains of the limbs, pelvis, or spine, more or less severe and constant, increased by motion. Deformity of the trunk; projection of the sternum; distortion of the pelvis and lumbar vertebræ (1). Bones of the limbs softer than natural, bent (2). Stature decreasing gradually, in some instances becoming a foot, or a foot and a half less. Urine sometimes depositing a copious earthy sediment, at other times of a natural appearance. Pyrexia in some cases present at the beginning of the complaint, in others supervening at a later period. Respiration and other functions disturbed. In females parturition is rendered more difficult and sometimes delivery by the natural passages becomes impossible.

On dissection the bones have been found of various degrees of softness. In some cases every bone, except the teeth, has been very much softened. The cylin-

(1) See Plates 1, 2 and 3—The curvature of the spine in this disease is from without inwards; whilst in the affection of the spine, producing paralysis of the limbs, the curvature is from within outwards; that is, the back in the former complaint is unusually hollow, in the latter very prominent — See Pott's Works Vol. III. p. 402. London 1783.

(2) See an engraving of M. Supiot and of her skeleton in Bromfield's Surgery, Vol. II. pl. 2d & 3d.

drical bones have been found converted into a parenchymatous substance and filled with a reddish matter, resembling the crassamentum of blood, instead of marrow. The bones of the cranium have been observed to be softer, of twice the natural thickness and without any vestige of diploe. The state of the cartilages is always natural.

DIAGNOSIS. This disease differs from Rheumatismus and Arthrodynia, to which it is nearly allied in the beginning, in the following circumstances; 1. The pains and lameness are more obstinate; 2. The joints are less affected; 3. A deformity of the trunk, or limbs, and a gradual decrease of stature take place — Hence in treating very obstinate complaints, supposed to be Ischias or Lumbago, especially in females, it will be proper to measure the patient occasionally and to observe whether the pelvis and spine are undergoing any alteration of form.

SECTION V.

THREE CASES OF MALACOSTEON ADULTORUM, WITH AN ANALYSIS OF THE URINE OF THE THREE PATIENTS, &c.

Case I.

Hannah Davis of Bradshaw-Street, Manchester, aged 22, was married when she was only 16 years old and has born four children at the full time. She ſuckled the first child about four months and then weaned

it in consequence of being attacked with a severe typhus. The second she gave suck to only during three months, the child dying at the end of that time. Of these two children she had easy labours. She nursed her third child nine months, and was in the beginning of the third month of her fourth pregnancy, when she weaned it. Her fourth child was dead born. The third labour was hard and long, but her delivery was effected without instruments. In her fourth labour she was with difficulty delivered by the perforator and crotchet.

Soon after her second labour she began to have pain in her back and became rather lame. She afterwards grew better and remained so, till she was in the fifth month of her third pregnancy. At this time she had a good deal of pain in her right hip, as well as her loins, and was lame. After her delivery she again became better. During the whole of the four last months of her fourth pregnancy, her pains and lameness were so much increased, that she could not walk over her room floor without assistance. In about six or seven weeks after her fourth labour, she again became able to walk without assistance, her pains abated and her general health im-

proved. Her stature decreased suddenly four inches soon after her fourth labour, and she thinks she is not become any shorter since.

She has led a sedentary life, being employed in mending damaged pieces of fustian. Her diet has been generally of a mixed kind and she has never indulged in using vinegar or salt improperly. After her third labour, she took ling liver oil in gin every day for about a week and rubbed the pained parts with the same. Her pains were rather relieved by this remedy; but supposing that both herself and her child were rendered more liable to take cold by the use of it, she gave it up.

At this time she is thin and very short. She experiences no pain, when she is sate at her work; but she always feels pain of a smarting kind in her back and right hip, when she stands or walks. Her respiration is easily hurried, and she is soon fatigued with walking. She has no pain in her limbs; sleeps well; has no unnatural heat on her skin; no thirst or want of appetite. Her pulse is neither very small, nor frequent. She menstruates regularly and has a greater discharge of blood than she formerly had. Her urine is generally clear when made, is of a straw colour, and

has only a cloud in it on standing for twelve hours or longer; but sometimes, she says, it deposits a copious white sediment like chalk. When her urine is clear, she is in better health.

Case II.

Mrs. R— of Blackburn, aged 40, was formerly a well formed woman. She has been the mother of eight children, of some of which I delivered her. None of her labours were difficult except the last, when such a degree of distortion had taken place in the superior aperture of the pelvis, that Mr. Chew, to whom I am indebted for the particulars of her case, was under the necessity of performing the operation of embryulcia.

She first perceived her health to decline about twelve years ago, in the interval of her third and fourth labours; so that five of her children have been born, since the primary symptoms of the disease took place. The complaint began about the last cervical vertebra and gradually descended downwards along the spine to the pelvis, producing pain, weakness, and some degree of lameness. She believes she has lost eight, or ten, inches

in height, and she now walks in a half-bent position.

It is more than four years since her last labour and no opportunity has offered of ascertaining the present state of her pelvis; but from her almost constant bad health and the great diminution of her stature, there is reason to believe, that it has suffered since that time a considerable degree of contraction. This seems confirmed by her own account, as she says the passages are nearly closed.

From the great narrowness of her chest, she is very liable to pulmonic complaints upon slight exposure to the usual external causes. When her health is better, she walks tolerably well, as the disease has not affected her extremities. She menstruates regularly. Her urine is sometimes of a natural appearance, at other times it has a turbid milky appearance and deposits a white sediment. She has never known it continue so long free from the white sediment, as it has done at this time.

The affection of the bones seems to be at present stationary, or making a very slow progress.

Mrs. R—— cannot attribute the attack of her complaint to any other cause than giving suck. She never was fond of salt, or vinegar, or any kind of pickles. She suckled six of her children about 12 months each; for the seventh child she had no suck. During her sixth pregnancy she gave suck, till the fœtus quickened: Her health continued declining through this pregnancy and towards the latter end of it she was obliged to be carried to and from bed: After her delivery she grew better.

About eight years ago, being on a visit at Liverpool, she tried electricity with great advantage. It removed the pain and she could walk with perfect ease for a short time afterwards.

Case III.

Mrs. B——, of Withy-Grove Manchester, aged 46, was married at the age of 23 and has born nine children at the full time. Seven of these were born alive and are healthy: The two last were dead born. Her labours were all expeditious except the last. She suckled each of the children, that were born alive, about eleven months. The intervals

betwixt the births of her children were always about two years. She ceased to menstruate about twelve months since.

Her stature has decreased a foot or more. She measures only four feet at this time. Her neck was formerly rather long, but her shoulders are now so much elevated, that she appears to have scarcely any neck. She is not quite 16 inches from the crown of the head to the os sacrum. Her back is excessively hollow, the shoulders and os sacrum very prominent. Her sternum projects and is much bent. Since the form of the thorax has become so much altered, her respiration has been short and is easily hurried. The left os ilium is raised much higher than the other and this side of the pelvis appears to be considerably more affected. Her limbs are not distorted, nor does she suffer any pain in them, except occasionally in her knees from taking cold. The deformity and diminution of stature have taken place entirely within the two last years.

It is about nine years, since she first began to complain of pains in her loins and hips: She was then in the fourth month of her seventh pregnancy. This attack she attributes to taking cold from a damp house.

Before the birth of this child she became lame and has remained so ever since.

Her health has been better for the four last months than it has been for two years. She has no feverish symptoms; no pain from sitting or standing: Her appetite is tolerable: Her urine is in small quantity and of the natural colour; nor does she recollect, that it has ever been white and turbid, when passed. Some time ago she could not walk over her room floor, without taking hold of some person, or the furniture; but she can now, though not without difficulty, walk over the floor entirely unassisted. She is carried down stairs every morning and remains out of bed through the day; but she has not been out of the house during the last three years.

Mrs. B —— formerly led an active life and used the same food as the rest of her family: She never took common salt in any unusual quantity, but has always used vinegar freely, though not in excess.

Experiments upon the urine of these three patients and that of a healthy adult.

The urine, taken singly, affords excellent characters of a few diseases, e. g. *Diabetes* and *Icterus*, which for brevity and certainty

may vie with the best essential characters, given by Linnæus in his Systema Naturæ. In many other complaints the quantity and quality of the urine are considered as very deserving of the attention of physicians, both as aiding them in the prognosis and as constituting a part of the histories of those diseases: And we have great reason to believe, from an ingenious paper published by Mr. Cruickshank in the Second Edition of Rollo's Cases of Diabetes, that still further assistance in the diagnosis of diseases may be derived from a more careful examination of this excrementitious fluid by the application of different re-agents (1).

Conceiving that further light might be thrown upon the nature of Malacosteon *adultorum* by an analysis of the urine of persons, afflicted with this malady, I have availed myself of the opportunities, which have offered, of examining the urine of the three females, mentioned above, with great care and attention; and though, partly from the disease being stationary, or making but slow progress, and partly from the constant varia-

(1) He has shewn that a very minute portion of bile may be detected in the urine by the addition of muriatic acid &c &c.

tion of the quantity of saline and other ingredients in the urine both of healthy and diseased persons, the results may appear not very satisfactory, I shall relate my experiments in hopes of inducing other practitioners, who may meet with patients in a more favourable state, to repeat these experiments upon their urine.

The urine of all these three women, which I analysed, was of a pale lemon colour and exhibited only a slight cloud on standing about twelve or fourteen hours. In no instance did it deposit the copious white earthy sediment, mentioned by authors as occurring in this disease; so that I have hitherto had no opportunity of determining, whether this sediment consists of phosphate, oxalate, or carbonate of lime, or of an admixture of two, or more of these substances. Should this white sediment occur, it may be proper to observe, that this should be well washed with distilled water and then, if it consist of carbonate of lime, an effervescence will be produced by the addition of diluted muriatic acid and a clear solution will be formed; if it be phosphate of lime, it will dissolve completely in diluted muriatic acid without effervescence and may be precipitated from this

acid by a solution of pure ammonia, and if it be exposed to a high degree of heat, its whiteness will not be impaired; if it be oxalate of lime, it will also dissolve in muriatic acid without effervescence; but, if it be exposed to a high degree of heat, the oxalic acid will be decomposed and the powder will become blackish.

Along with the experiments, made upon the urine of these patients, I shall mention the result of exactly similar experiments, made upon the urine of a healthy adult of middle age, that any deviation from the healthy standard may be immediately and clearly perceived.

Experiment 1st. A slip of paper, stained with litmus, was dipped in the urine of a healthy adult and was slightly reddened by it.

The urine of H. Davis, Mrs. R. and Mrs. B. produced a similar change in slips of litmus-stained paper.

This experiment shews the presence of a small quantity of free, or disengaged acid in the urine of each of these persons, which is necessary to hold the phosphate of lime in solution.

Experiment 2d. A solution of pure ammonia was added to four ounces, by measure, of

the urine of a healthy adult, till it was evident from the smell of the mixture, or from the change produced by it in the colour of paper, stained with litmus, or radish juice, that the alkali prevailed. The urine became turbid and was filtred through a piece of paper, accurately weighed. The filtring paper with the precipitate adhering to it was dried perfectly and weighed; the weight of the filtring paper being then deducted, the precipitate was found to weigh in one instance $3\frac{1}{2}$ grains; in another $2\frac{3}{4}$; in another $2\frac{1}{2}$; in another $2\frac{1}{4}$; and in another 2 grains—Average 2.6 grains in 4 ounces.

Four ounces of Davis's urine treated in the same way yielded in one instance 4 grains; in another $3\frac{1}{2}$; in another 3; in another $2\frac{3}{4}$ grains—Average 3.312.

Mrs. R—'s urine yielded 8 grains; 5; 4; $2\frac{1}{4}$;—Average 4.812 grains.

Mrs. B—'s urine yielded $6\frac{1}{4}$; 6; $4\frac{3}{4}$; $2\frac{3}{4}$; $1\frac{1}{2}$ grains—Average 4.25 grains.

In this experiment the ammonia combining with the free phosphoric acid, the phosphate of lime, held in solution by that acid, is precipitated (1). We learn from this experiment, that the average quantity of phos-

(1) It was not determined, whether this precipitate contained any phosphate of magnesia.

phate of lime, carried out of the system in the urine, is greater in all the three patients than in the healthy adult and in Mrs. R. is more than double the quantity. And though the quantity may appear small at first view, yet when it is considered that this is constantly carried out for months and years, its effects may at length become very considerable.

Experiment 3d. To $1\frac{1}{2}$ ounce of the urine of a healthy adult $5\frac{1}{2}$ ounces of lime water were added. The mixture was kept in a vial, well corked, for several hours. The clear part of the liquor was then carefully poured off and the remainder was filtred. The precipitate, when perfectly dried, weighed in four different instances $8\frac{1}{2}$; 6; $4\frac{1}{2}$; 3 grains —Average 5.5 grains in $1\frac{1}{2}$ ounce of urine.

H. Davis's urine yielded $6\frac{1}{2}$; $4\frac{1}{2}$; $4\frac{1}{4}$ grains —Average 5.083 (1) grains.

Mrs. R—'s yielded 6; 5; 3 grains—-Average 4.666 grains.

Mrs. B—'s urine yielded 7; $4\frac{1}{4}$; $2\frac{3}{4}$ grains —Average 4.666 grains.

In this experiment the lime not only saturates the free phosphoric acid and precipitates

(1) It has not been judged necessary in expressing the fractions of grains to go beyond three places of figures.

the phosphate of lime, held in solution by it; but it also decomposes the phosphates of soda and ammonia, contained in the urine, and uniting with their acid forms phosphate of lime (1), hence this substance is obtained in greater proportion, when lime water is made use of than when ammonia is employed—From this experiment it appears, that the healthy urine contained more free phosphoric acid, or a greater proportion of phosphates of soda and ammonia, or of both, than the urine of Mrs. R— and Mrs. B—, and rather less than the urine of Hannah Davis.

Experiment 4th. To 4 ounces of the filtred urine of a healthy person, from which the phosphate of lime had been precipitated by a solution of ammonia, as in Exp. 2d, a solution of muriate of barytes was added, till no further precipitation took place. The precipitate, when dried, weighed 17; $14\frac{1}{2}$; $8\frac{1}{2}$ grains—Average 13.333 grains (2).

(1) On this account lime water promises to be an useful remedy in Malacosteon, though unaccompanied by any medicine containing phosphoric acid. See above page 196.

(2) Four ounces of healthy urine, upon which no previous experiment had been made, yielded 22 grains in

H. Davis's urine yielded 19; 18; 17$\frac{1}{2}$ grains—Average 18.166 grains.

Mrs. R—'s urine yielded 14$\frac{3}{4}$; 14; 12 grains—Average 13.583.

Mrs. B—'s urine yielded 32$\frac{1}{2}$; 26$\frac{1}{2}$; 24 grains—Average 27.666 grains.

The phosphates of soda and ammonia are decomposed in this experiment. The muriatic acid combines with the two alkalis and forms neutral salts, which remain dissolved in the water; whilst the barytes combines with the phosphoric acid and forms phosphate of barytes, which is precipitated in a very fine white powder.—This experiment therefore shews, whether the phosphates of soda and ammonia are in a greater, or less proportion than the healthy standard. Here the proportion was greater in the urine of the three patients than in the healthy urine.

Experiment 5th. A saturated solution of acetite of lead was poured into four ounces of the urine of a healthy adult, till no fur-

one instance and 20 grains in another—Mr. Cruickshank found, that healthy urine with this re-agent, yielded a precipitate of 13 grains, which he found to be equivalent to about 24, or 25 grains of microcosmic salt, or the phosphates of soda and ammonia, as these are usually mixed in the urine.

ther precipitation ensued. The precipitate, when dried, weighed 33; 33; 28 grains—Average 31.333 grains.

H. Davis's urine yielded 57; 27; 25 grains—Average 36.333.

Mrs. R—'s urine was not submitted to this experiment.

Mrs. B—'s yielded 44; 37; 32 grains—Average 37.666.

This experiment indicates the proportion of both the muriatic and phosphoric salts in the urine; for the muriates, as well as the phosphates, are decomposed and the precipitate consists of muriate and phosphate of lead.—To determine the proportion of these substances, the precipitate is to be digested in twenty times its weight of hot distilled water. The muriate of lead becomes dissolved and the phosphate of lead remains insoluble; consequently the loss of weight, sustained by the precipitate, shews the quantity of the muriate of lead. I treated twenty grains of precipitate, obtained from the urine of a healthy person, in this way and it lost only three grains: But Mr. Cruickshank, having obtained 31 grains of precipitate from 4 ounces of healthy urine and digested them in hot water, found that seven grains were

taken up; the remaining 24 grains were found to be phosphate of lead and equivalent to 23 or 24 grains of microcosmic salt—We find from this experiment, that the healthy urine contained a less proportion of phosphates and muriates, taken together, than the urine of either H. Davis, or Mrs. B—.

Experiment 6th. An infusion of galls was added to 4 ounces of healthy urine, till no further change took place. The precipitate, when dried, weighed 6; 5; $4\frac{1}{4}$ grains—Average 5.083 grains.

H. Davis's urine yielded 22; 11; $5\frac{1}{2}$ grains—Average 12.833 grains.

Mrs. R—'s urine was not examined by this re-agent.

Mrs. B—'s urine yielded 16; $9\frac{1}{4}$; $8\frac{1}{2}$—Average 11.25 grains.

The principle of tan, or *tannin*, detects the mucilage or gelatine in urine—According to Seguin, the precipitate, produced by infusion of galls from urine, is much more copious, where the digestion is much impaired. The proportion was considerably greater from the urine of the above two patients than from the healthy urine.

Experiment 7th. Three ounces of healthy urine being evaporated, till the extract was

dry enough to be rubbed easily into a dark-coloured powder, this was found to weigh 20 grains.

Three ounces of H. Davis's urine yielded 22 grains — In another instance the same quantity of her urine yielded 61 grains; and I have to regret, that I did not ascertain the quantity of phosphate of lime &c in this portion of urine.

Three ounces of Mrs. R—'s urine yielded 16 grains.

Three ounces of Mrs. B—'s urine yielded $22\frac{3}{4}$ grains.

This experiment shews the proportion of salts, gelatine and urée, taken collectively, in three ounces of urine (1).

(1) According to Mr. Cruickshank (See his *Experiments on and the Manner of distinguishing several diseases by the urine*, in Rollo's Cases of Diabetes) the specific gravity of urine reaches from 1005 to 1033, that of distilled water being 1000. By evaporation 36 ounces yield a residuum, weighing from 1 to $1\frac{1}{2}$ ounce, which consists of salts and animal extractive matter. He observes with great propriety, that the relative proportions of these substances vary so much in the same person both in health and disease, that it is not easy to fix on what may be considered as a healthy standard for urine; but the proportions, he says, may be nearly as follow.

The other experiments, which I made upon the urine of these different persons, I deem it unnecessary to detail, as irrelevant to the present subject.

It was my wish to have added a similar series of experiments, made upon the urine of several ricketty children and that of a healthy little girl, taken as a standard. But, after taking a good deal of pains, I have not yet been able to meet with a sufficient number of well marked cases of Rachitis for this purpose. All but one of the children, that I have seen of late afflicted with this disease, have been so young, that their urine either

	Oz.	Dr.	Gr.
Muriates of potash and soda	0	1	0
Phosphates of soda and ammonia.....	0	3	50
Lithic acid and phosphate of lime with excess of acid.....	0	0	25
Animal extractive matter	0	3	40
	1	0	55

He observes, that the quantity of extractive matter in urine is more variable than that of any other substance; that the proportion of phosphate of lime is about two grains to four ounces; that the quantity of precipitate, obtained from four ounces, by muriate of barytes is thirteen grains, by acetite of lead thirty-one grains; by infusion of galls about four grains.

could not be collected at all, or not in sufficient quantity for experiments. I am, therefore, induced to postpone the publication of the experiments I have already made, till I have had an opportunity of analysing the urine of three, or more children in an advanced stage of ricketts.

This Appendix was originally intended only to comprise the two first sections. In consequence of an unexpected delay in the execution of the etchings of Ellen Gyte's pelvis, I was induced to write and print the third section, and, the plates being still detained, I have been led to add three sections more. These circumstances are stated here for two reasons; 1. That the reader may be apprized, that the opinions I have given in the third section with respect to the proximate cause of Malacosteon *Rachitis* and *adultorum*, are not founded on the experiments, which I have made on the urine of patients, labouring under these two diseases; for these were made subsequently to the writing of that section; and 2dly. That he may excuse the irregular arrangement of the cases of cesarean operation, which was utterly unavoidable on my part, and has arisen from five of these not coming sooner to my

knowledge. I have thought it better to give them a place in the end of this appendix, than not notice them at all.

SECTION VI.

A REPORT OF FIVE ADDITIONAL CASES OF THE CESAREAN OPERATION.

In three of the cases of cesarean operation, comprehended in this section, the event was favourable to the parent; in the remaining two it was unfavourable.

The three first cases are related by M. Baudelocque in the *Recueil Périodique de la Société de Médecine de Paris*, for January 1801: The two last are taken from the Medical and Physical Journal for the present month (June 1801).

First Case. In June 1793 M. Verdier, surgeon of the civil hospital of Nogent-le-Rotrou, in the Department of Eure and Loire, informed M. Haudry, that it was impossible to deliver — Thoureau of a living child by the natural passage, because the diameter of her pelvis, taken from the symphysis pubis to the os sacrum, appeared to him to be only 2 inches and she had already

been fatigued with fruitless pains for 7 or 8 days: These two accoucheurs, being agreed upon these points, decided in favour of the cesarean operation, which was performed in the *linea alba* about five o'clock in the evening. The incision was 9 inches in length and was carried downwards nearly to the ossa pubis. The womb was opened as low as possible and a living child was extracted with great ease. The woman lost so little blood during the operation, that they were very much surprized at it. Notwithstanding the length of the external wound, only one stitch was made near the middle of it and this it was found necessary to cut the next day about nine in the morning, on account of a painful drawing, which prevented the patient from coughing. The applications to the wound were retained by a bandage with an opening in it, that they might not be obliged to remove them at every dressing. The lochia were discharged freely by the inferior angle of the wound; but none passed per vaginam. The patient was cured in 45 or 50 days after the operation. A hernia formed in this woman very soon, which in the space of six months resembled a large melon in bulk. M. Haudry attributes the

success of this operation to the great extent of the external incision and to the uterus being opened in the middle of this; which, he says, favoured the passage of the lochia and afforded them an opportunity of seeing the uterine wound at each dressing; for he assures us, that it constantly presented itself under that of the integuments.

Second Case. M. Verdier was called the year following (1794), about a league and a half from Nogent, to see the wife of a labourer, who had been in labour during seven days. Having examined this woman, he estimated the antero-posterior diameter at an inch and ten lines. He sent for M. Haudry, who advised her to come to the hospital at Nogent, where she did not arrive till the ninth day of her labour at two in the afternoon. The operation was performed three hours after, in the same manner as upon the first woman. The child lived several months and the mother was completely cured in 25 or 30 days after the operation.

Third Case. This woman, having become pregnant again, placed herself under the care of the country gossips and surgeons, who dissuaded her from lying-in at Nogent, by promising to deliver her without having re-

course to the cesarean operation; which however they performed, after having tried in vain to deliver her with the forceps. She died in eight or ten hours after this operation, which was performed upon one side of the abdomen.

The above cases are attested by Messrs. Lefebure Sen. and Bisson, surgeons at Nogent-le-Rotrou, who declare that they saw these two women operated upon by Messrs. Haudry and Verdier, and that one of the women was still living on the 17th of Germinal in the 7th year (6th of May 1799) and also by the commission of the united civil hospitals of the aforesaid Commune of Nogent and the municipal administration of the same place.

Fourth Case. This was a successful operation and is related by Dr. Kurzwig of Riga. The woman had been in labour more than three days. Her pelvis measured only two inches in diameter. The incision was made in the *linea alba* to the extent of eight inches. The loss of blood was very inconsiderable. The wound was stitched and this part of the operation occasioned much pain. On the 7th day after the operation a piece of the omentum separated, that was incarce-

rated in the lower part of the wound. In the course of three months the woman was entirely cured and all the symptoms during this period were very slight. The child was in a very putrid state.

Fifth Case. This, though performed under favourable circumstances, proved fatal to the mother, but the child was preserved. It is related by Dr. Klein of Stuttgard. The pelvis of this woman was extremely distorted. The external incision was made in the right side of the abdomen, about two inches from the umbilicus, in an oblique direction. The woman died four days after the operation.

As all these cases were unknown to me, when the Preface* was printed, it will be proper to state here, that the whole number of cesarean births, recorded in this and my two former publications on this subject, amounts to *two hundred and thirty one;* that the successful ones amount to *one hundred and thirty nine* and the unsuccessful ones to *ninety two.*

In the beginning of the first Section of this Appendix, I have given a short account of the cesarean operation, lately performed at

* See Preface page 7th.

Edinburgh by Mr. John Bell and am happy in announcing, that his brother, Mr. Charles Bell, will give the full detail of this operation and the dissection with a series of Engravings, in a *Work on the Anatomy and Pathology of the Womb.* To the latter of these gentlemen I am much indebted for a beautiful drawing of the pelvis and a sketch of the skeleton of the woman, who was the subject of the operation. From these drawings and the communication, which accompanied them, I am enabled to state, that this woman was afflicted with Malacosteon *adultorum.* Her limbs were perfectly straight, and in their dimensions equal to those of a very tall woman. The bones of the trunk only had suffered. The scapula was found to be bent like a piece of heated parchment. The spine was so bent, that the aorta almost made a figure of 8. The chest was so compressed by the action of the muscles as to oppress the heart and lungs. The pelvis was most wonderfully distorted. The superior aperture was of the triangular form and its dimensions considerably smaller than those of the pelvis of Eliz. Thompson, of which a description and engraving are given by Mr. Wood in the *Appendix to the 5th Vol. of the Memoirs of*

the Medical Society and in my *Second Letter to Mr. Simmons.* The distance from the os sacrum to the union of the os ilium and pubis *on the left side* measured only one sixteenth of an inch; *on the right side* only half an inch. The largest circle, that the pelvis would admit in any part, was not more than one inch.

AN EXPLANATION OF THE PLATES.

Plate I.

A view of the superior aperture of the pelvis of Ellen Gyte.

A The symphysis pubis, or anterior symphysis of the pelvis.

B The junction of the 4th and 5th lumbar vertebræ.

EF The angles formed by the bodies of the 2 ossa pubis.

L The right sacro-iliac, or posterior symphysis.

M The left sacro-iliac, or posterior symphysis.

OO The heads of the thigh bones.

PP The cristæ of the ossa ilia.

Q The articulation of the os coccygis with the os sacrum.

R The spinous process of the left os ischium.

Plate II.

A view of the inferior aperture of the same pelvis.

A The apex of the os coccygis.
B The symphysis pubis.
CD The spinous processes of the ossa ischia.
EF The tuberosities of the ossa ischia.
a b Their nearest points.
GH The rami, or branches, of the ossa ischia.
IJ The rami of the ossa pubis.
K The sacro-vertebral angle.
LL Portions of the thigh bones.

Plate III.

A profile, or lateral view of the same pelvis.

A The third lumbar vertebra.
BB The cristæ of the ossa ilia.
C The right thigh bone.
D. The os coccygis.
EE The spinous processes of the ossa ischia.
F The symphysis pubis.
G The right foramen thyroideum.
Obs. The dimensions of this pelvis are given in pages 168—171.

Plate IV.

A view of the superior aperture of the pelvis of Martha Rhodes.

A The four lower vertebræ of the loins.
BB The right and left os ilium.
C The symphysis of the ossa pubis.
DD The tuberosities of the right and left os ischium.
EE The right and left foramen thyroideum.
FF The spinous processes of the ossa ischia.
G The distance between the sacro-vertebral angle and the inside of the symphysis pubis.

Plate V.

A view of the inferior aperture of the same pelvis.

A The uppermost part, or first bone of the os sacrum.
B The apex of the os coccygis.
C The processes of the higher lumbar vertebræ seen in perspective.
DD The outside of the right and left os ilium.
E The symphysis of the ossa pubis.
FF The tuberosities of the ossa ischia.
GG The spinous processes of the ossa ischia.

HH The foramen thyroideum on the right and left sides.

I The distance between the projection of the uppermost part of the os sacrum and the inside of the symphysis of the ossa pubis.

Plate VI.

A lateral view of the same pelvis, shewing the extraordinary projection of the spine over the cavity of the pelvis.

ABCD The four lowest lumbar vertebræ.

E The right os ilium.

F The tuberosity of the right os ischium.

G The outside of the lower part of the os sacrum.

H The os coccygis.

I The spinous process of the right os ischium.

K The right ischiatic notch.

L The right acetabulum.

M The right foramen thyroideum.

N The left foramen thyroideum, seen from the inside of the pelvis.

O The upper part of the right os pubis.

P The upper part of the left os pubis.

Q The anterior-inferior spinous process of the right os ilium.

R The same process of the left side.

S The anterior-superior spinous process of the right os ilium; that of the left side is hidden by the projection of the lumbar vertebræ.

Obs. A full description of this pelvis, which was distorted in consequence of Rachitis, is given in my Second Letter to Mr. Simmons, pages 187 &c.

TWO ADDITIONAL CORRECTIONS.

PAGE	LINE	
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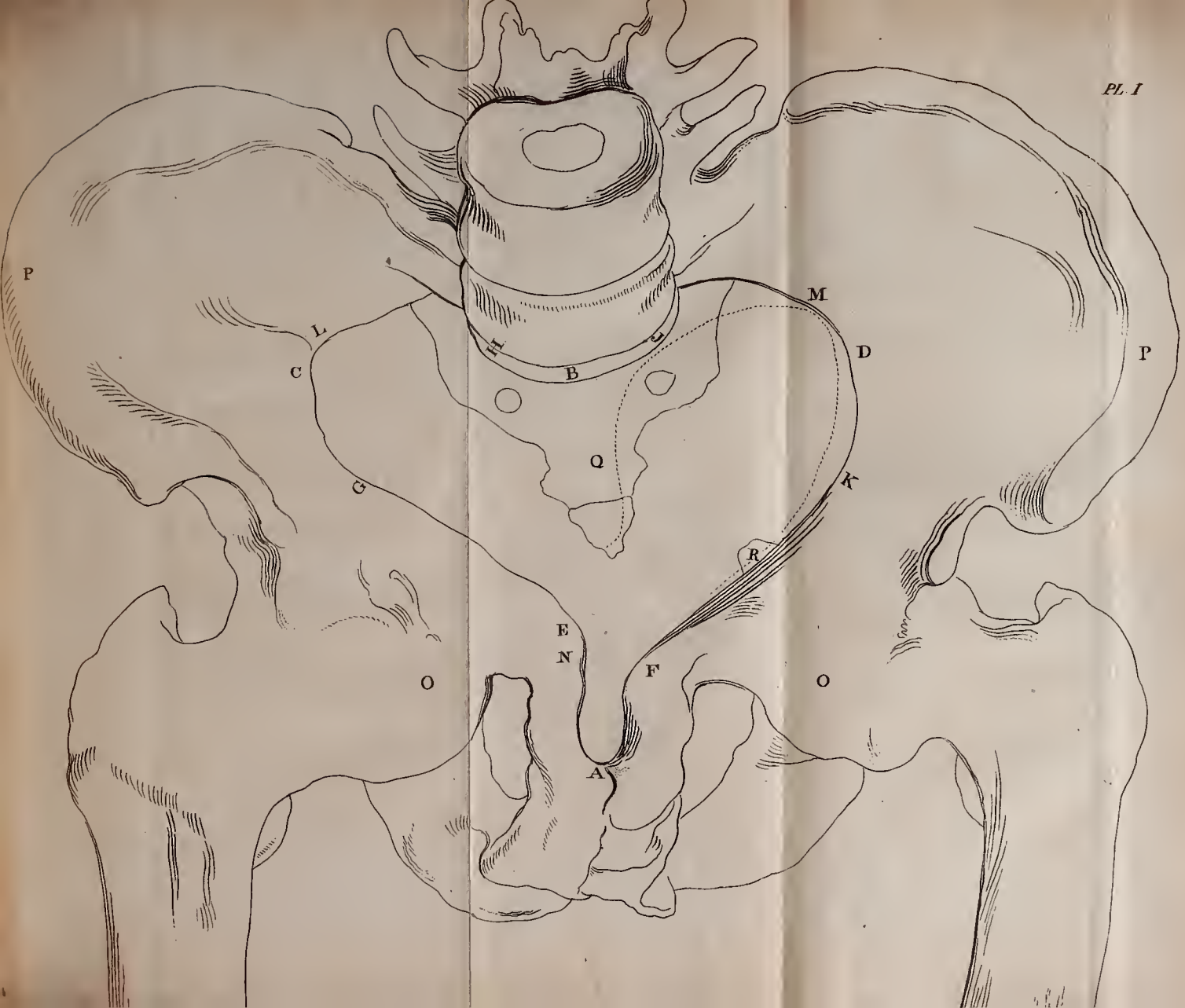
*** Dr. Hull takes this opportunity of making his best acknowledgments to those gentlemen, who have subscribed to his Epitome of the Nosologia Methodica of Sauvages, and of informing them, that, as the subscriptions are inadequate to defraying the expence of printing this work and the price of paper is so much advanced, he has, for the present at least, given up all thoughts of sending it to the press.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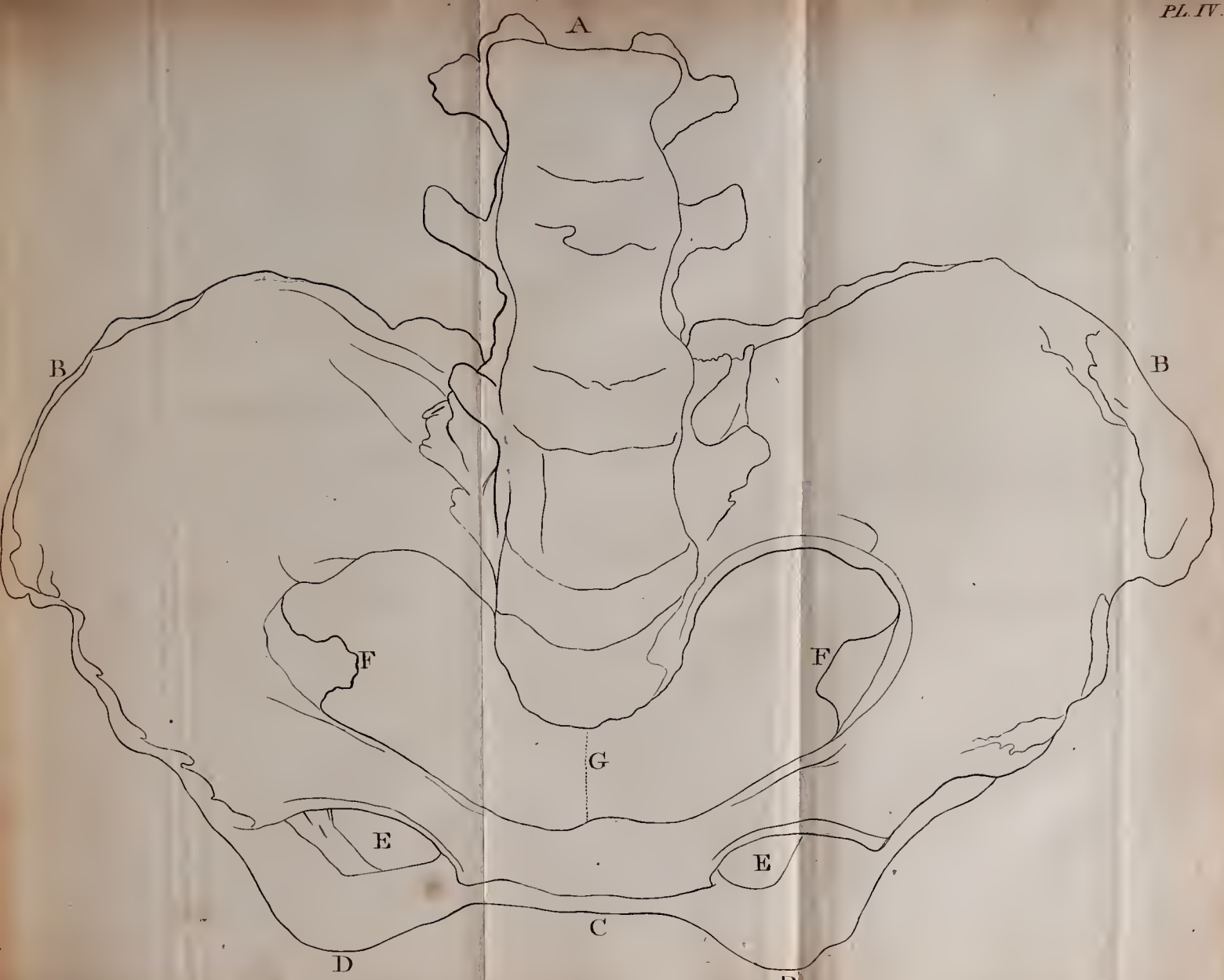
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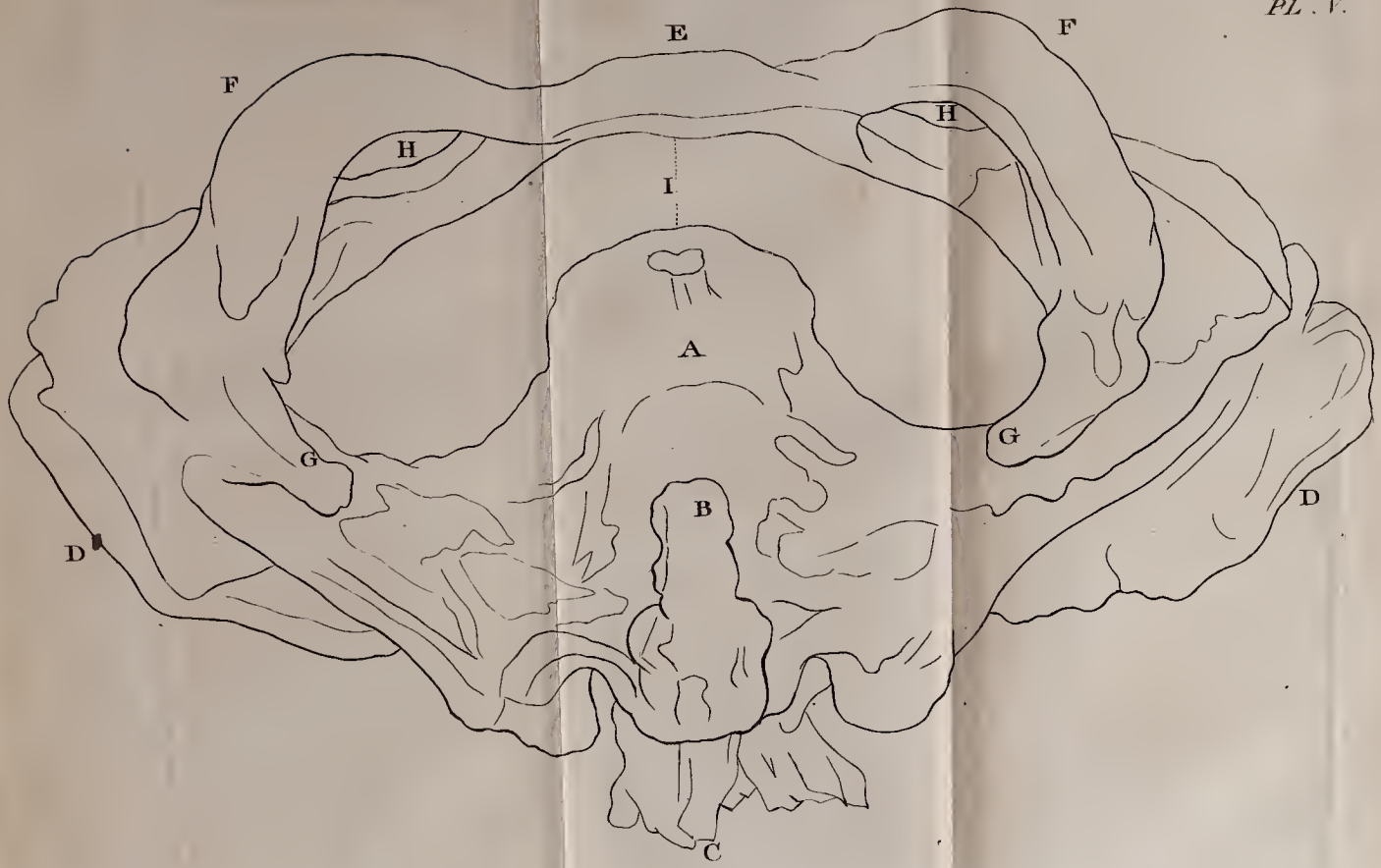
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A DEFENCE

of the

CESAREAN OPERATION,

with

OBSERVATIONS ON EMBRYULCIA,

and the SECTION of the

SYMPHYSIS PUBIS,

addressed to

MR. W. SIMMONS, OF MANCHESTER,

AUTHOR OF REFLECTIONS

on the

PROPRIETY OF PERFORMING

the

CÆSAREAN OPERATION.

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BY JOHN HULL, M. D.

Member of the Corporation of Surgeons, and of the Physical Society of London; of the Natural History Society of Edinburgh; and Secretary of the Literary and Philosophical Society of Manchester.

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" MALEDICERE, MALEFACTA NE NOSCANT SUA."

Terentii Prolog. in Andriam

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A LETTER

to

MR. WILLIAM SIMMONS.

Manchester, Dec. 24, 1798.

SIR,

A few days ago one of my friends sent me for perusal a copy of your Reflections on the propriety of performing the Cæsarean Operation. To these, although extremely averse to controversial writing, I feel myself bound to reply, not only in vindication of my own character, but also of those of the respectable and experienced Accoucheurs, who were concerned with me in the performance of the Cesarean Operation, alluded to by you as "a late occurrence."

It is not necessary to inform you, that I had been, for some time previously to this case, en-

gaged in preparing for the press a Treatise on Cesarean Births; the publication of it having been announced both in the London and Manchester Newspapers; but that you may not remain ignorant of the reason, why it is not already before the publick, I shall now tell you, that it is because I am in daily expectation of receiving, through the kindness of my friend Mr. Rupp, some important publications upon the subject from Germany, which I have not been able to obtain from the booksellers of London or Edinburgh.

Could I have been satisfied with bringing forward a few stale quotations from Rousset, Marchant, Paré, Mauriceau, and Dionis, with the addition of a few of a more recent date from the authors noticed by you, my treatise might have been printed in the year 1793, when Mr. Barlow's case was put into my hands for publication. For I had then collected a much greater quantity of opinions and facts, not irrelevant to the subject, than are contained in your work. But impressed with the importance of an operation, in the event of which the lives of two human beings are frequently involved, I have been induced to study the subject with extreme care and attention, and to take up the consideration of it upon every possible ground. For in my larger work, which

will be published with all convenient speed, I shall treat of the propriety of the Operation as employed,

1. Where the Mother is dead, for the preservation of her Offspring;

2. Where the Child is dead, or supposed to be so, for the preservation of the Parent;

3. Where the Mother and Child are living, for the preservation of both.

I shall treat of the *causes* which render the operation necessary; of the *different methods of performing it;* of the *after-treatment;* of the *causes of death* in the unsuccessful cases, which have occurred in Great Britain; and of the *manner* in which the operation itself proves fatal. The means, which have been proposed with the view of superseding the necessity of it, will also be examined, &c. &c. Under each of these heads I shall adduce correctly and dispassionately the evidence I have been able to collect on both sides of the question; I shall afterwards give my own opinion upon the subject, as deduced from reasoning on the evidence stated, and from experience; and, finally I shall leave to my readers the liberty of determining for themselves what line of conduct

they ought to pursue in each individual case. Having done this, I am willing to flatter myself, that even those, who decide in opposition to my sentiments, will still thank me for the pains I have taken in furnishing the necessary evidence; more especially as that evidence is scattered through a multiplicity of writings, and writings at this time not attainable without very considerable trouble and expence.

It is from the materials collected for that undertaking, Sir, that I am enabled to reply to you so expeditiously, and to prove so satisfactorily, that your book is a *compound* of *unjust* and *malicious insinuations* against a man, who never gave you the least offence; of *pernicious precepts;* of *false assertions;* and of *garbled extracts.* This Language may to the publick appear harsh. It is such as I have never before used, and it is such as I could wish never to have had occasion to make use of: But your aggression is of such a malignant nature as to justify my employing the severest expressions.

> " Tum si quis est, qui dictum in se *inclementius*
> " Existimabit esse, sic existimet:
> " *Responsum, non dictum esse, quia læsit prior.*
>
> Terentii Prolog. in Eunuchum

You begin with saying " The Cæsarean section or operation has been a subject of disscussion among medical men for the two last centuries,

first upon the Continent, and afterwards in this country. The result of their experience has been strikingly different, for while it is said to have been practised with success in other nations on the Continent of Europe, it has proved fatal in England in every instance. This singular difference in the event of an operation is unparallel'd in any other case, and unless climate be admitted to have great influence, no sufficient cause has been yet assigned. However inexplicable the subject may be, the intelligent practitioner will be governed by the fact, and will not hazard the life of his patient on theoretical grounds. Impressed with these sentiments I have been induced, by a late occurrence, to reexamine the subject, and to lay the result of my inquiry before the public, to prevent as far as my influence shall extend, the revival of an operation that has proved so fatal to my country women."

You here admit that the operation has been performed with success upon the continent, and yet at page 30 you make the following declaration: " Considering then the Cæsarean operation either analogically, or as having been uniformly fatal in this country, it must be abandoned, or as Doctor Osborn observes, the patient will be *doomed to inevitable destruction.*" Are you not, Sir, apprized that the force of the words *in-*

evitable destruction precludes every possibility of recovery? Let me now inform you that this difference in the event of an operation is not so *unparalleled* as you intimate; and permit me in proof to bring forward the following quotation from one of the latest and best publications on Surgery, that have appeared in this Island. "In the treatment of herniæ it has been remarked, that the French Surgeons prove usually more successful than German or British practitioners, and so far as I know, no reason can be assigned for the difference, but that the French *proceed more early to the operation* than the surgeons of almost any other nation." Bell's Surgery Vol. 5. Page 300. You will pardon me, I hope, if I take the liberty of assuring you that there is a material difference betwixt a patient's dying *from an operation*, and *after an operation*, although, blinded by prejudice, you have entirely overlooked this very necessary distinction with regard to the operation in question.—If you were called upon to perform the Operation for the Hernia, after the intestine, or prolapsed viscus, has been so long incarcerated, that it is either absolutely in a gangrenous state, or so much injured that it must inevitably become so; or to perform the Operation of the Trephine, in a case where there was an extensive destruction of the texture of the brain, would you, Sir, if the event were fatal, acknowledge that the patients

died from the operation? Certainly not, the great mischief done to the abdominal viscus in the former, and to the encephalon in the latter case, are in themselves sufficient to account for the death, independently of the operation. Again, when your patients have been exhausted by uterine hemorrhages, and you have judged it necessary to deliver by turning the children, if they have died in Child-bed, have you been willing to allow, that their deaths were properly ascribable to the violence used by the operator? I anticipate your answer, it will be No. Have you not rather referred the death to the debility, occasioned by previous effusion of blood? Why then are you so perversely ingenious, as to impute every death, occurring after a Cesarean Birth, to the mode of delivery, that has been thought necessary to be adopted by the attendant practitioners, who were in full possession of every circumstance of the case, and of which you are, if not entirely, at least comparatively ignorant? In France and some other Nations upon the European continent, you need not be told, that the Cesarean operation has been, and continues to be performed, where the British practitioners do not think it indicated, that it is also had recourse to early, as in the case of hernia mentioned above, before the strength of the mother has been exhausted by the long con-

tinuance, and frequent repetition of tormenting, though unavailing, pains, and before her life is endangered by the accession of inflammation of the abdominal cavity. From this view of the matter, we may reasonably expect, that recoveries will be more frequent in France than in England and Scotland, where the reverse practice obtains. And it is from such cases as these, in which it is employed in France, that the value of the operation ought to be appreciated. Who would be sanguine in his expectation of a recovery under such circumstances, as it has generally been resorted to in this country, namely, where the female has laboured for years under Malacosteon, a disease hitherto in itself incurable; where she has been brought into imminent danger by previous inflammation of the intestines, or other contents of the abdominal cavity; or been exhausted by a labour of a week's continuance or even longer. And if the event should be fatal, what unprejudiced person would attribute it entirely to the operation? You see then, without having recourse to the *influence* of *climate*; without supposing any *material change* in *the laws of the female constitution*, as you would intimate at page 11, this difference of success is truly *explicable* on the ground of preexisting disease. I don't deny, that the operation has contributed very materially to the fatality of the event in some cases both here, and

upon the continent. I freely admit, that the death of the patient in some cases is wholly chargeable upon the operation: But is not that also the case with regard to Lithotomy, and other capital operations of surgery, though conducted with all possible address? To the observation, that "the intelligent practitioner will be governed by the fact, and will not hazard the life of his patient on theoretical grounds," I most cordially assent. I am extremely desirous that the propriety of my practice should in all cases be determined according to this scale, and I shall, towards the end of this letter, take the liberty of applying it to an untried project by Dr. Hunter, which you have adopted, with the intention of superseding the Cesarean operation, viz. the conjunction of Synchondrotomia Pubis with Embryulcia.

When it is considered, in what high terms of condemnation you spoke of the operation, immediately after I had performed it; when it is considered, that you announced your *Reflections* (and truly they are not misnamed), in a Manchester Newspaper, within less than a fortnight afterwards; when it is considered, that you have not been able to elucidate the subject in any one point, nor to bring forward a single new or good argument against this mode of delivery; I think it will be extremely clear to every one, that you

were actuated by invidious and malicious motives; that you wished to destroy the character of a man, whose short residence in the town had not afforded him a sufficient opportunity of making his professional attainments generally known, and to injure his coadjutors in the estimation of their townsmen. And nobody, I trust, will give you credit for acting from the motive, which you have been pleased to assign. I will conclude, what I have to say upon the quotation already given, by hinting, that when you publish a second edition of your *Reflections*, it would be as well to substitute the word *repetition* for *revival*, as the latter may lead a person unacquainted with the subject, to suppose the operation in question had been struck out of the catalogue of Surgical Resources.

I will next consider what you have advanced concerning the birth of one of our kings. You say "The title (of Cesar) has been given to others, and among the rest to our Edward the sixth, but it appears to have been unmerited by him, his mother Queen Jane Seymour being safely delivered, although she lived only twelve days after her delivery." And the authority you bring forward is Henry's History of England, Vol. vi. page 231. Let us now examine the evidence in favour of his being brought into the world by the Cesarean Section. Let us first see what Mauriceau and

Dionis declare upon this point. " Il y à neanmoins des occasions où on pourroit dire, que la vie corporelle de l' enfant doit être préferable à celle de la mere, a laquelle on ne peut pas s' exempter de faire l' operation Cesarienne, pour conserver la vie de l' enfant, comme il pourroit arriver qu' on seroit obligé de faire, pour tirer du ventre de la mere, un enfant qui devroit être le successeur de quelque grand Royaume; parceque le salut du public est preferable à celuy d' un particulier. C' est ainsi qu' *Henry VIII.* qui regnoit en Angleterre du temps que *François I.* regnoit en France, permit qu' on fît à *Jeanne Seymer* sa troisiéme femme, à laquelle on fit la section Cesarienne par le conseil des Medecins, pour tirer de son ventre *Edouard VI.* qui a depuis succedé à la Couronne d' Angleterre ; préferant ainsi la vie de cet enfant à celle de sa mere, qui mourut quelques jours après cette cruelle operation." Mauriceau, Traite des Maladies des Femmes Grosses, &c. Tome 1. P. 358. ed. 5. " La reine étant dans les douleurs de l' accouchement de son premier enfant, on vint demander au Roy lequel il vouloit qu' on sauvât, ou la mere ou l' enfant parce qu' on ne voyoit point de moyen de les conserver tous deux : l' enfant répondit-il, car pour des meres j' en trouverai assez. Cette réponse ne laissa pas que d' étonner, quoiqu' on ne dût point en attendre d'

autre d'un Prince qui de sept femmes qu'il eût, en répudia les unes, et fit décapiter ou mourir misérablement les autres, & qui venoit de renoncer à sa Religion." Dionis, Cours d'Opérations, &c. Demonstr. 2. Of the latter passage I shall give a translation. " When the Queen was in labour of her first child, the King was asked whether he would have the life of the mother or the infant preserved, for it was judged impossible to save both. The child's, replied he, for I shall be able to find mothers enough. This answer did not fail to astonish, although no other ought to have been expected from a prince, who of his seven wives, divorced some, caused others to be beheaded, or to die miserably, and who renounced his religion."

You see that both the French Accoucheurs, whom I have quoted, agree in affirming, that Edward the sixth was brought into the world by the Cesarean section, and I could adduce a similar testimony from De la Motte: But, instead of that, I shall give two extracts from Hume's History of England, which will go a great way in support of the above. Speaking of Anne Bullen, he says, " Anne's enemies soon perceived the fatal change; and they were forward to widen the breach, when they found that they incurred no danger by interposing in

those delicate concerns. She had been delivered of a dead son; and Henry's extreme fondness for male issue being thus for the present disappointed, his temper, equally violent and superstitious, was disposed to make the innocent mother answerable for the misfortune." Chap. xxxi. "Soon after this prosperous success, an event happened which crowned Henry's joy, the birth of a son, who was baptized by the name of Edward. Yet was not his happiness without allay: The queen died two days after. But a son had so long been ardently wished for by Henry, and was now become so necessary, in order to prevent disputes with regard to the succession, after the act declaring the two princesses illegitimate, that the king's affliction was drowned in his joy, and he expressed great satisfaction on the occasion." Chap. xxxi.

I will only bring forward one piece of evidence more upon this head, and will then endeavour to draw a conclusion from it, favourable to the operation. "He (Dr. G. Owen) was a witness to the will of King Henry VIII. who left him a legacy of a hundred pounds. It is reported that the succeeding prince, Edward VI, was brought into the world by Dr. Owen's means, who performed the Cæsarean operation on his mother." Aikin's Biogr. Memoirs.

You may perhaps fancy, that I have given myself a good deal of unnecessary trouble, in order to throw light upon an immaterial point of English history; but you must now learn, that my views extend rather further. For if you admit the authorities brought forward, as proving satisfactorily the operation to have been performed upon Queen Jane Seymour; it will follow by your own concession, that it has been performed, once at least, without endangering the life of the mother, even in England. And if you reject the authorities, as insufficient and unworthy of belief; remember that from Mauriceau and Dionis you draw your principal arguments, or rather invectives against the Cesarean operation.

We shall now see how admirably qualified you are for giving an opinion upon the manœuvres of Midwifery; and an analysis of the works of Hippocrates relative to that subject.

You say at page 5th "Hippocrates, who practised medicine in the fifth century before the Christian Æra is silent on this operation. His directions are few but judicious on the management of labours. Considering the head as the only natural presentation, when any other part presented, he directs it to be returned, and the head to be brought down "ut prodeat secundum

naturam." When the child was dead, and the head presenting could not be delivered by the pains, he orders it to be opened and the bones of the cranium to be picked away with forceps or the crotchet; and when further resistence is made from the swelling of the body, he directs to lessen it, by cautiously introducing a sharp curved instrument affixed to the larger finger, and guarded so as not to injure the mother, and then to extract it piecemeal with the embryulcus. If the hand or foot presented and could not be returned, he directs it to be amputated, and the head to be brought down; should this attempt fail, recourse to be had to the division of the parts, and then to the crotchet."

Do you maintain, Sir, that when any other part presents it ought to be returned, and that the head ought to be brought down?

Will you persist in declaring, that if the hand or foot present, and cannot be returned, it is a judicious direction, to amputate the presenting member, and to bring down the head?

If these directions be regarded by you as judicious, it will not be unfair to infer, that your practice is correspondent to them: and if this

should prove to be the case, I may with great justice exclaim *mutatis mutandis* in your own words, " I pity your patients without envying your credulity." See Page 34. For I deny that any worse precepts can be selected from all the trash, that has been written on the subject of midwifery.

That Hippocrates, or rather the unknown author or authors of the books *de Morbis Muliebribus*, *de Octimestri Partu*, and *de Superfœtatione*, (for they are confessedly not genuine), was not ignorant, that delivery by the feet was practicable; and that he did occasionally at least terminate the labour, without returning them, and making the head present, will appear evident from the following passages. The first is from the book *de Octimestri Partu*. " Φύεται γὰρ πάντα, ἄνω τὴν κεφαλὴν ἔχοντα, τίκτεται δὲ πολλὰ, ἐπὶ κεφαλὴν, καὶ ἀσφαλέστερον ἀπαλλάσσει τῶν ἐπὶ πόδας τικτομένων, τὰ γὰρ συγκαμπτόμενα τῇ σώματος ἐπὶ κεφαλὴν ἧπω κωλύει ἧττον τῇ παιδίῳ, ἀλλὰ μᾶλλον ὅταν ἐπὶ πόδας ὁρμήσῃ, τα ἐμφράγματα γίνονται." περι ὀκταμήνου. " *All* children are formed with the head uppermost, yet *many* are born with the head first, and pass more safely than those, which are born with the feet foremost: for the bendings of the body do not obstruct the child,

which is coming into the world with the head first: But it is rather, when it presents the feet, that obstacles take place."

In the next passage, which is taken from the book *de Superfœtatione*, he directs us, when the child is born all but the head, to introduce both hands, previously moistened with water, between the os uteri and the head, and in that way to extract it. "ὁκόταν δὲ τὸ μὲν ἄλλο σῶμα θύρηφι ᾖ τῶν αἰδοίων, ἡ δὲ κεφαλὴ εἴσω ἐπὶ πόδας φερομένου τοῦ ἐμβρύου, ἐπὴν περιάγῃς τὸν δάκτυλον ἐν κύκλῳ ἀμφοτέρας τὰς χεῖρας παρεὶς μελαξὺ τῆ ϛομάχου καὶ τῆς κεφαλῆς, βρέξας ὕδατι ἐξελκῦσαι."

In the third, taken from the first book *de Morbis Muliebribus*, you will find, that he illustrates the difficulty of an oblique or transverse position of the child, by the comparison of an Olive-kernel in a narrow-mouthed Oil-flask; that he speaks of a delivery, with the feet foremost, as generally fatal either to the mother, or infant, or both. And that he also speaks of the difficulty, attending the delivery of the child, when it is doubled. "καὶ ἢν πλάγιον ᾖ, χαλεπὸν γίνεται το πάθημα. ὡς γὰρ εἴ τις ἐς λήκυθον μικρόϛομον πυρῆνα ἐμβάλλοι ἐκ εὐφυὲς ἐξελεῖν πλαγιεύμενον, ὅτω δὴ καὶ τῇ γυναικί χαλεπὸν πάθημα τὸ ἔμβρυον ἔπει-

δὰν λοξωθῇ, καὶ γὰρ καλεπὸν ἐξελθεῖν. χαλεπὸν δὲ καὶ ἦν ἐπὶ πόδας χωρήσῃ καὶ πολλάκις ἢ αἱ μητέρες ἀπώλλοντο, ἢ τὰ παιδία, ἢ καὶ ἄμφω. ἔςι δὲ καὶ τόδε μέγα ὄφελος τῷ μὴ ῥηϊδίως ἀπιέναι, ἦν νεκρὸν, ἢ ἀπόπληκτρον. ἢ διπλοον ἢ."

We will next see, if you please, whether your powers are better adapted to making a report of the writings of Celsus.

" Celsus," you say, " who lived in the first century of the Christian Æra, copies Hippocrates, but is more full on the subject than his predecessor. In his chapter on the extraction of the dead fœtus, he deviates however in one very material point, namely, in bringing down the feet when near at hand, or when one presented, or when it was necessary to turn, instead of pushing them back to make it a head-presentation. This was unquestionably a very great improvement, (for I have not met with any mention of it in the writings of Hippocrates) as it is well known that such a presentation requires on that account, no material deviation from the treatment of a natural labour. They had but few resources in those times for saving the child or hastening the delivery ; when any difficulty or delay presented, change of posture, succussion, and the endeavour to bring down the head, when not presenting, or

the feet, according to Celsus, for I am willing to extend his practice to the living fœtus,* seem to be the whole of their scanty catalogue, and with some few medical directions, of very doubtful propriety, this short sketch comprehends their practice, as far as concerns the birth of the child."

* *Note.* " Whether turning and extracting by the feet had been occasionally practised, during the life of the child, on the presentation of certain difficulties, does not now appear; but the doctrine of turning and delivering by the feet was first publicly taught by Paré."

If the direction noticed above were judicious, viz. when the hand or foot presents, and cannot be returned, to amputate it, and bring down the head; I wish to ask you, How it can be *a very great improvement* to deliver by the feet, as you here represent? The modes of practice are diametrically opposite: and therefore, if you contend for this being such an improvement, I must contend, that the precept of Hippocrates is extremely injudicious. And I think you, upon a little reflection, will hardly venture to deny it. That *you* have not met with any mention of delivery by the feet in the writings of Hippocrates, does not at all surprize me; although I have fully proved, that such a practice is repeatedly mentioned in the

writings attributed to Hippocrates, and quoted by you as his works. For it is a matter of doubt with me, whether you can read a single aphorism of that author in a latin translation; and I shall prove by and by, that you either have not the *ability* or the *honesty* to translate very easy and perspicuous latin. *Utrum horum mavis accipe.* Nay, I will even indulge you so far, as to step out of my way to bring one instance forward here, because you may perhaps have a wish, that the proof should immediately follow the assertion. In your *Reflections*, you will find at page 34, the following passage. "One of Rousset's operators made a circular incision to shew his superior dexterity." Upon my word, Sir, you have demonstrated your superior dexterity, as a translator, by construing the humane and amiable motive of the two surgeons employed, "*quo matri parcerent*" "*to shew his superior dexterity.*" As it is an authentick case, and the event was successful, and as I shall have occasion to allude to it hereafter, I will bring forward so much of the history of it, as comprizes the names of the parties, and the motive for making the incision in that manner "Quæ." (speaking of Johanna Michel) "cum diu ab obstetricibus frustra esset misere tractata, tandem Adamum Albericum & Guillelmum Colas, insignes Chirurgos ad se vocavit: hi postquam infanti brachium diu ex utero materno pro-

pendens, jam emortuum et lividum abscidissent, nec tamen reliquum corpus extrahere possent, latus dextrum incidere, vulnere orbiculari & angusto satis (quo matri parcerent) facto." F. Rosseti De Part. Cæs. Pag. 21.

" When Johanna Michel had been a long time miserably treated by the midwives, to no purpose, she sent for Adam Aubry and William Colas, two celebrated surgeons. They cut off the arm of the infant, which had been long hanging down from the uterus, and was dead and livid; and being unable to extract the remaining part of the body, they made an incision in the right side, the wound was made of a circular form and rather narrow *(that they might spare the mother)*."

Let us now return to Celsus, and allow me to tell you, that you have misinterpreted him. Behold his words, " Verum intus emortuo corpori manus injecta protinus habitum ejus sentit; nam aut in caput, aut in pedes conversum est, aut in transversum jacet: fere tamen sic, ut vel manus ejus, vel pes in propinquo sit. Medici vero propositum est, ut infantem manu dirigat *vel in caput, vel etiam in pedes*, si forte aliter compositus est. Ac, si nihil aliud est, *manus vel pes adprehensus, corpus rectius reddit, nam manus in caput, pes in pedes eum convertet.*" Lib. vii. Cap. xxix. You have as-

serted in the extract given above that "when it was necessary to turn" Celsus brought down the feet. This is evidently an interpolation of your own. Pray be so good as to answer the question I am now going to propose; Is it not necessary to turn the child, when a *hand* presents? You surely will not have the audacity to reply in the negative. But you will find in the passage, quoted by me, that Celsus did not direct the child to be turned, and brought by the feet, *when a hand presented.* He says, that *the body of the child is placed in a better situation by laying hold of either a hand, or a foot; for, by pulling at the hand, we shall bring the head to present; and, by pulling at a foot, we shall bring the feet to present.*

In the note you assert, that "the doctrine of turning and delivering by the feet was first publicly taught by Paré." Are you sure of this? Did you never hear of such a Surgeon as Pierre Franco? Nor of his Traité des Hernies contenant une ample déclaration de toutes leurs especes, et autres excellentes parties de la chirurgie; à savoir, de la *Pierre*, des *Cataractes* des yeux, et autres maladies——avec leurs causes, signes, accidens; Anatomie des parties affectées, et leur entiere guérison. *A Lyon* 1561. 8vo? If you have not, I would advise you to procure it, for it is an able work; and you will there learn that the doctrine

which you have been pleased to ascribe to Paré, is due to Franco; at least Haller and many others believe so, "Fetum omnino pedibus jubet extrahere *primus* (Petrus Franco), ut puto." Halleri Bibliotheca Chirurgica, Tom. 1. Pag. 211.

Nothing new, or worth my notice, occurs in page 7, I will therefore pass on to your critique on Rousset's treatise on the Cesarean Operation. You say, page 8, "The cases he details are sufficiently numerous to warrant his recommendation, had they been collected on less exceptionable testimony; but, I think, he gives only one on his own authority; and others are drawn from a correspondence of little weight, as hearsay or the rumours of the ignorant. By his recommending it to be performed early, the preservation of the child seems to have been a main object. In several of his cases, however, as in the third and sixth, a putrid fœtus was extracted. The mother was unnecessarily exposed to extreme hazard in others, for when a child could be born by a natural labour the Cæsarean section must be unjustifiable; and yet in the case he testifies the mother had a natural birth a year and a half after; and in the fifth and sixth histories, he mentions the like to have happened. Yet the work appears to have had considerable reputation, from Caspar

Bauhin taking the trouble to translate it into latin from the original French, and adding an appendix of his own. How high soever its repute might have been with some, the practice met with considerable opposition from others, for Rousset himself tells us, that the physicians and surgeons of his time declined performing this operation, and that in most of his cases a barber (tonsor) was the operator. There were however some exceptions. Although surgery was in a rude state at that period, even in France, I cannot persuade myself that this operation would have been generally consigned to such hands with so many instances of success. A fondness for the marvellous is prominent in many of his histories, and in none more than in the case communicated by his friend Villanova, who writes that he never knew a patient recover on whom the operation had been performed by an incision in the side (the usual way) but, in the case he relates, he accomplished the delivery by applying the actual cautery, so as to penetrate through the abdominal muscles and uterus. It must be observed that his patient afterwards bore children."

Before I undertake the defence of this excellent and amiable writer, against your shameful and ill-founded aspersions, I shall prove, that he was physician to the Prince of Savoy, &c. that

he took his degree at Montpellier, in the year 1581 ; and that his writings are held in high estimation. " Rousset (François) fut Médecin du Prince de Savoie, Duc de Genevois & de Nemours. Il fit ses études de Médecine à Montpellier, Rondelet fut son Président, & Saporta son hôte et son protecteur. C' est dans cette Université qu' il fit une étude réfléchie de la Chirurgie. Il a publié un ouvrage très intéressant, intitulé. Traité nouveau de l' HISTEROTOMOTOKIE, ou enfantement césarien. *Paris* 1581, in 8vo. Traduit en latin par Gaspar Bauhin. *Basileæ* 1582, 1588, 1591, in 8vo. *Parisiis* 1590, in 8vo. *Francof.* 1601, 8vo." Portal Histoire de l'Anatomie & de la Chirurgie, Tome 2. Page 75.

" Il fut reçu Docteur en Médecine dans l' Université de Montpellier en 1581, & l' ouvrage de Marchant ne parut qu' en 1598." Ibid. P. 180.

Let us now see what the illustrious Haller, whose judgment no man can call in question, says of this author, and his writings. " Posteriores libellos non vidi, sed princeps illa ὑστερο τομαλοκια egregius est labor, cordate & mascule scriptus, eujus eo seculo nihil prodiit simile. Primum ad incidendum vivæ matris uterum in difficultate pariendi insuperabili Chirurgorum

spem erigit, per exempla vulnerum et ulcerum uteri feliciter sanatorum, ipsius etram incisionis uteri superstite matre institutæ, &c. &c." Bib. Chir. Tom. 1. pag. 240.

You admit that the cases which he details, are sufficiently numerous to warrant his recommendation of the Cesarean operation, had they been collected on less exceptionable testimony, but, *you think*, he gives *only one* on his own authority. The cases given by him in his Treatise are seventeen, and he gives two more in the appendix; so that if I can adduce that number (nineteen), I shall stand justified for practising the operation by your own concession. Of the seventeen cases recorded by our author in his Treatise, he informs us that *eleven* are from the account of *credible* persons, " ex fide dignorum relatu;" and that *six* fell under his own immediate knowledge, " historiæ ab ipsomet auctore visæ & notatæ." The latter six, I suppose, you will therefore think sufficiently authentick: But if you should not, it is not very material, for the number brought forward hereafter, will permit me to indulge you in an extensive challenge.

The next of your observations, which I shall offer a comment upon, is this, " The mother was unnecessarily exposed to extreme hazard in

others" (other cases), "for when a child could be born by a natural labour the Cæsarean section must be unjustifiable." The quotation from Celsus, given at the beginning of your book, "Differre quoque pro natura locorum genera medicinæ, et aliud opus esse Romæ, aliud in Ægypto, aliud in Gallia," teaches us that different modes of practice ought to be adopted in different places; that one is necessary or proper at Rome; another in Egypt; and a third in France. To this precept, permit me to add, that different modes of practice have been found necessary and justifiable, in similar cases, at different Eras. It is upon this ground, that the *highly injudicious* precepts of Hippocrates, noticed above, were justifiable in his time; because the practitioners of that period were not acquainted with better. Upon the same principle the use of the crotchet (though destructive to the child) was justifiable, before the invention of the Forceps, in cases, which can be terminated, with safety to the infant, at the present day: For the art of midwifery did not then offer a more valuable resource, and it was undoubtedly better, that the child alone should be sacrificed, than that the mother and child should both perish. Let us therefore be charitable enough to Rousset, to allow that the practice, recommended by him, was at that epoch more than justifiable; that it was

truly meritorious; for labours were in this way terminated without the loss of either of the lives, interested in the event of it, when the delivery was judged impossible by any other means, with which surgeons were then acquainted. You very coldly admit, that Rousset's work *appears* to have had considerable reputation from Caspar Bauhin *taking the trouble to translate it into latin*, and adding an appendix of his own. C. Bauhin saw clearly the merit of the work, and the judgement of the world has confirmed his opinion; for besides the editions, mentioned above, it has been printed in two editions of a Collection of the writers on the diseases of Women, entitled Gynæciorum, &c. Argentinæ 1597. Basileæ 1626. And it requires no great degree of prophetic spirit to foretell, that Rousset's volume will be carefully preserved in the libraries of the learned, when your *Reflections* are sent

" in vicum vendentem thus & odores,
Et piper, & quicquid chartis amicitur ineptis."
Hor. Epis. 1. Lib. ii

" Where pepper, odours, frankincense are sold,
And all small wares in wretched rhimes enrolled."
Francis.

You next inform us, that in most of Rousset's cases, a barber was the operator, but that there were *some exceptions*. Of the seventeen cases, related in his treatise, nine were truly under the

management of barbers; but the remaining eight were under the treatment of eminent surgeons; whose names, as well as the names, and places of abode of the patients, are expressly mentioned. You proceed to accuse him of a *fondness for the marvellous*, which you say is in none of his histories more prominent than in the case communicated by his friend Villanova, "who writes that he never knew a patient recover on whom the operation had been performed by an incision in the side (the usual way), but, *in the case he relates, he has accomplished the delivery, by applying the actual cautery, so as to penetrate through the abdominal muscles and uterus.*" This is a most intolerable misrepresentation, and *you* can best explain whether it proceeds *from inattention, ignorance*, or *from a more dishonourable* cause. The women, whose histories are related by the venerable octogenarian Physician Villanova, &c. are, at the beginning of the chapter, expressly declared to have been not pregnant at the time, "*quamvis illæ mulieres non forent gravidæ, sed summo apostemate uteri (quod longe pejus erat) laborarint.*" Hence it is evident that Villanova only gave directions for the opening of a large abscess in the abdomen of two unimpregnated females, who recovered, and afterwards bore children. Long as the quotation is, it must be brought forward, to

stand as an irrefragable proof of the want of authenticity of your writings.

" *Classis altera, continens historias quatuor de Abdomine, cauterio actuali aperto.*"

CAPUT III.

Verum ne forte causa alicui sit dubitandi, Uterusne adeo affectus ad extractionem fœtus demortui (qui ulcerum horum causa erat conjuncta) felici cum successu & matris salute, secari potuisset, recitabo in hac secunda classe aliquot veras historias, quæ in æque periculosis casibus ex abdomine inciso, felicem habuerunt successum, quas ex duorum clarissimorum medicorum literis cognovi, *quamvis illæ mulieres non forent gravidæ, sed summo apostemate Uteri (quod longe pejus erat) laborarint.* Horum vero adhuc viventium Medicorum celebritas, testimonii & auctoritatis loco esse potest, quorum alter est D. Albosius Senonensis Medicus, cujus nomen cum adeo sit celebre, in causa est, ut de eo plura non sim dicturus: alter vero est *D. Villanovanus senior*, Valdreaci in Provincia habitans, primus, qui me, post quam studiis meis finem imposuissem, & *Doctoris titulo* ornatus fuissem, ad invisendos ægros deduxit. Quorum epistolas ex ipsorum libris curationum extractas (uti omnes Medicos facere decet) et ab

ipsis mihi communicatas, cum ex copiosiori, elegantiorique sermone latino, quo scriptæ erant, brevibus in Gallicum transtulerim, hic inseram.

HISTORIA I.

Joan. Albosius, Rosseto S.

Non minus admiratione dignus est, quam tua sit Cæsarea sectio, casus ille, qui juxta ædes meas accidit: Mulier Utero gerens, cum aut proper grandiorem ætatem, aut aliam ob causam parere aliter non potuisset, nisi frustratim partibus ipsius fœtus exclusis, utraque latera ipsius infimi ventris valde tumida habuit, propter vim ferreis instrumentis illatam, præsentibus etiam omnibus signis, apostema ostendentibus, quod etiam cum ductibus naturæ communionem habebat. Quare cum ipsius infimi ventris pars affecta, cauterio, et quidem amplo facto vulnere, aperta fuisset, magna puris quantitas effluxit, sed non minor puris quantitas, quæ ejusdem et substantiæ, & coloris fuit, per Uterum profluxit. Verum pati noluit, ut speculo matrici indito, quantus esset ipsius sinus, experirer: nihilominus tamen satis conspicuum erat, & apostema, et vulnus cauterio inflictum ad uterum usque vergere, quod ex symptomatibus, quæ successive

accidebant, & etiam excrementis similibus, colligi potuit: dein etiam ex eo, quod pari pacto, eodemque tempore utraque pars affecta fuerit percurata. Quare cum ita se res habeat, uti vidi, mirum non est, quod in tua gastrotomia tradis, cum longe difficilius sit tale ulcus, quam simplex ejusdem partis vulnus, curari. Vale.

HISTORIA II.

Altera historia priori similis, ejusdem Albosii.

Cum cuidam Nicolaæ, Simonis Pistoris Senonensis uxori infans mortuus, instrumentis ferreis violenter foret extractus, absque lochiorum fluxu, et secundinæ extractione: tum intra dies quinque ex utraque parte infimi Ventris, magnus tumor obortus cum Apostematis signis evidentissimis. Quare cauterio actuali, uni ex lateribus profundissime impresso, ex Apostemate aperto Chirurgus copiosum sanguinem grumosum, putridum et fœtidum manu extraxit: ita tamen ut alterius lateris tumor non consideret, nec etiam secundinam educere posset: quare et alterum latus ipsum aperire oportuit, unde secundinam extraxit. Hoc tamen non sine extremis doloribus, in tam ancipiti & desperato casu evenit: semianimis enim remansit, triennio se lecto continuit: biennio vero post, fulcris innixa, obambulabat: postmodum scipioni solum innitebatur,

et sic tandem successive sanitatem pristinam adepta est, ita ut ab eo postmodum tempore plures habuerit infantes, inter quos unus Sebastianus nomine, qui adhuc et in vivis est, & in hac urbe habitat. Vale.

HISTORIA III.

Duæ aliæ ejusdem argumenti historiæ a Villanovano communicatæ.

Nicolaus Villanovanus, Rosseto salutem : Mirum in modum, &c. Sed ut ad rem veniam, fateor me tanto, ex quo vixi tempore, nunquam vidisse mulierem, quæ per latus enixa sit, & superstes remanserit, ut ad me scribis. Memoria quidem recolo, quod cum Dominæ de Piles moniali, infimus venter mirum in modum intumuisset, jussu meo Mauracium Valdreaci Chirurgum, Abdomen cauterio actuali ad Uteri fundum adacto, aperuisse : unde tam per vulnus, quam partes inferiores, ultra septem libras puris, quod semper simile fuit, emanavit : & ut de loco affecto certiores essemus, specillo partem inferiorem dilatavimus, ita ut facile magnitudinem ipsius ulceris Uterini conspexerimus, quod sex mensium spatio percuravimus: ab illo tempore filiam enixa, quæ adhuc superstes est. Anno 1532, hoc accidit.

HISTORIA IV.

Altera Historia ab eodem.

Simile accidisse uxori Pharmacopæi Brisseti Montlimarii habitantis, et etiam curatam fuisse attestor: cui contra duorum Medicorum consilium, qui eam tractabant, consentiente tamen marito, simili cauterio usque ad interiorem Uteri partem adacto, Hypogastrium aperiri curavi: unde pus, usque ad spondæ pedes exiliit, et eodem tempore admiranda saniei copia inferne profluxit. Hæc trimestri spatio curata, statim post concepit: nam exinde tres filios, unamque filiam enixa est: accidit ann. 1558. Gratias ago Deo, quod cum jam peregrinationis meæ octuaginta quinque annos absolverim: tamen, sua benignitate, adeo corpore sim sano, ut præter exercitia quæ a me fieri vidisti, adhuc quotidie corpore bene disposito tam eques extra, quam pedes intra urbem incedam. Verum ut mihi omnia felicia precaris, sic vicissim ut tibi in pari & etiam majori ætate eadem largiatur Dominus, exopto. Vale.

You refer to Section iv. Part v. Hist. iii. but there is no part 5th in this Section; and the 3rd Hist. given above from Sect iv. Cap. iii. must be the case to which you allude. I shall therefore be at the trouble of translating it for you, and you cannot complain that I have given a muti-

lated quotation; because the whole of the chapter is laid before you. "To come to the point, I must confess that I have never in the whole course of my life seen a woman, who has brought a child into the world through a wound in her side, and has survived it, as you inform me. I recollect however, when the abdomen of Madame de Piles, a *religieuse*, was wonderfully tumefied, that Maurice, a surgeon at Vualreas, opened it under my direction, by pushing an actual cautery to the Fundus Uteri, by which means more than seven pounds of pus were discharged, partly by the wound, and partly *per partes inferiores*. And, that we might be still more certain respecting the part affected, we dilated the lower part sufficiently to allow us the opportunity of seeing with ease the size of the ulcer of the womb; which we dressed during six months: After that time she was delivered of a daughter, who is still alive. This happened in the year 1532."

You see, Sir, in all this history there is no mention made of *accomplishing the delivery by an actual cautery*.—Is it not, Sir, extremely wrong either *inadvertently*, *ignorantly*, or *wilfully* to misrepresent the words of a respectable author, and then to attempt to destroy his credibility by an *unfounded* charge of a *fondness for the marvellous?*

If you can in this shameful manner misreport *recorded* histories; How is it possible, that we can avoid suspecting the authenticity of those cases, and experiments, related by yourself, and of which no other person has had any cognizance? Impressed with the force of this observation, you will surely never henceforward undertake to make a single surgical report, without having previously obtained the signature of some credible person to it.

After giving an account of the case of Elizabeth Alespachin, wife of J. Nufer, related in Bauhin's Appendix to Rousset's Treatise, you add, "I am inclined to think from the expressions that this was a case of extra-uterine fœtus. She lay in afterwards five times, first of twins, and then of four single births. Several of his cases besides strike me as being extra-uterine, which would make a very essential difference in the consequences to be apprehended from the operation; and I must candidly confess my doubts whether it was ever performed in others, they are given on such indifferent testimony, and are related with circumstances so improbable.".

The only expression which can induce any one to suppose so, for a moment, is this, "Verum *primo ictu* ita feliciter abdomen aperuit, ut subito

infans absque ulla læsione extractus fuerit." " He at the *first stroke*, or incision, opened the abdomen so successfully, that the child was extracted uninjured." Yet it is hardly to be expected, that a man, unacquainted with the cautious steps of modern surgery, would act differently. It is certainly much more likely, that he would cut at once through the parietes of the Abdomen and Uterus down to the child. And the circumstance of the child's being born alive can scarcely leave the least doubt upon the mind of any unprejudiced person, that this was a true uterine case.

My ingenious friend, Dr. Haighton, in the Medical Records and Researches has been very properly employed, in searching into the authenticity of those recorded cases, where the mothers have recovered after Cesarean Births, and has endeavoured to shew, that many of the cases might have been extra-uterine, because the relaters have not been sufficiently particular in their descriptions, to remove all our doubts. As I shall have occasion in a future work, to examine his opinions with attention, I shall at present content myself with considering what he says upon the case in question. These are his words. " The authenticity of the case of the sow-gelder's wife at Siergenhausen, in Germany, though often quoted, seems to rest on no better evidence than the life

of the child; for every thing else, that could probably fix our wandering conjectures, seems to have been overlooked." Page 253. And at page 250, speaking of a case, where the proof of its being a true Cesarean Operation depended on the single fact of the child's being born alive, he adds, "I believe the instances where the child has been saved in the extra-uterine cases are very few, because the true state of things is seldom ascertained during its life, and the inducement to operate is generally the consequence of some attempt, which nature has been making to relieve herself by forming an abscess in the Abdomen."

For my own part I freely confess, that I have never to my knowledge, read an account of one instance of a child's being extracted alive by an operation in a truly extra-uterine case; and I should be extremely glad to have such a one pointed out to me. I acknowledge, however, the possibility of it; and think this fully proved by the case, related by Mr. Turnbull, in the Memoirs of the medical Society, Vol. iii. page 176. But when we consider the infrequency of extra-uterine cases of any species, *ovarian*, *tubal*, or *ventral*; when we consider how small a proportion of these are *ventral*; and when we consider that it is only in a few of these, and scarcely any of the former kinds, that the fœtus arrives at the size,

which it acquires *in utero ;* the life and healthy state of the child, extracted by the operation, will nearly amount to a demonstration of its having been in the uterus at the time, or of its having recently escaped into the cavity of the abdomen through a rupture of that viscus. And the arguments, founded on the supposition of its having been *ab origine* extra-uterine, will deserve little attention, as tending to prove that the recorded cases were not truly Cesarean Births. In one of Rousset's cases, mentioned at page 22 of this Letter, all doubt is removed by the circumstance of the child's arm appearing *in vagina*.

The number of uterine cases, related in the Appendix, appear to me to be six (two of which have been mentioned above), and two I believe to have been extra-uterine, viz. the 8th and 9th.

After saying, "Several of his cases besides strike me as being extra-uterine," you add, "which would make a very essential difference in the consequences, to be apprehended from the operation." I allow that this circumstance would make a very essential difference in the consequences to be apprehended. I really believe, that the consequences would more frequently be disastrous; because there would be great danger of fatal her-

morrhage, from making an attempt to detach the placenta from the parts, to which it adheres in those cases, on account of their not possessing the contractile power of the Uterus. And if the placenta should be left behind (which I consider as the more eligible practice), I am fully convinced, that it would be more likely to excite inflammation, &c. of the abdominal cavity, than a mere coagulum of blood, which is all that remains to be absorbed after a true Cesarean operation, when the divided parts heal by the first intention. See Mem. of the Med. Soc. P. 197.

Hence it appears, that, by considering the cases of Bauhin as extra-uterine, the poor women have survived a more dangerous operation than Hysterotomy.

You observe at page 11, " Lest serious argument should fail of its due effect, Marchant, surgeon to the King, attacked it" (the operation) " in several satirical poems, the third of which he entitled " Tumulus Cæsarei Partus."

I will favour you with an Epigram by *Marchant*, who belonged to the Corps de St. Côme, in which it will not be difficult to prove him guilty of using extremely abusive language, and making a false charge against Rousset, viz. that

he was not a physician. You will be pleased to turn to the quotation given at page 27, which will be sufficient to invalidate his testimony.

" PRO REGIO PARISIENSIUM CHIRURGORUM COLLEGIO.

Ordinis es cujus, rogo dic Rossete, vel artis
Si medicorum (inquis) te suus ordo rogat;
Nec tu donatus lauro, titulove medentum,
Et furtim exerces, quod titulo ipse nequis:
Sed tu dum scindis miseras per frusta parentes,
Artis eris cujus, dic rogo, *carnificis.*"

An extract from the Works of Amb. Paré, next claims my attention, you give it from Johnson's Translation, b. 24. c. 31. p. 619.

" I cannot sufficiently marvail at the insolencie of those that affirm that they have seen women whose bellies and womb have been more than once cut, and the infant taken out, when it could no otherwise bee gotten forth, and yet, notwithstanding, alive; which thing there is no man can persuade mee can bee done, without the death of the mother, by reason of the necessarie greatness of the wound that must be made in the muscles of the bellie, and substance of the womb, for the womb of a woman that is great with child by reason that it swelleth and is distended with much bloud, must needs yield a great flux of bloud,

which of necessitie must be mortal. And to conclude, when that the wound or incision of the womb is cicatrized, it will not suffer the womb to be dilated or extended to receiv or bear a new birth. For these and such other like causes, this kind of cure, as desperate and dangerous, is not (in mine opinion) to be used."

Had Amb. Paré been satisfied in his own mind, that the effusion of blood must of necessity be fatal, he might have spared himself the trouble of speculating falsely upon the bad effects of the cicatrix of the womb, in a succeeding pregnancy. It will be shewn in the course of this letter, that even the cicatrix, arising from a *ruptured uterus*, has not prevented the succeeding pregnancy from terminating successfully. And that his apprehension of an absolutely fatal hemorrhage, from the wound in the uterus, is still less founded in fact, it will be extremely easy to prove. In the two cases of Cesarean births, in which I have operated, and in a great many others, which I can adduce, the quantity of blood lost during the operation has been very trifling, not more than five or six ounces, and the quantity lost afterwards, not so great as occurs after a common natural labour; nor do I recollect one case, in which there was any dangerous bleeding, during the operation, either from the wound in the

parietes of the abdomen, or from that of the Uterus, after a true Cesarean operation. The quantity of blood, found coagulated within the abdomen, in the case related in the 4th Vol. of the Medical Observations and Inquiries, is the largest which I recollect, and that appears to have been at least partly lochial, and to be ascribable to the intractability of the patient after the operation. Lauverjat, a living French author, who has performed the Cesarean operation five times, and with success three times, is so far from considering the effusion of blood too large, that he recommends it to be promoted, as will be seen from the following quotation, which I have given from a German Translation by Eysold, the original not being procurable. " So bald man die Nachgeburt gewahr wird, muss man einen Theil absondern, und die Wunde mit einem gläsernen mässig erwärmten Trichter bedecken, und eine Menge Blut, so viel man nöthig glaubt, herausgehen lassen, um die Mutter-gefässe hinlänglich auszuleeren.

Diese Manier, sich die Sache zu denken, ist von der der Schriftsteller, die vom Kayserschnitt geschrieben haben, sehr verschieden. Alle rathen den Mutterkuchen zu vermeiden, in der furcht für der Blutung, welche aus dessen Verletsung entstehen könnte. Man muss zwar ohne allen

Widerspruch sich vor der Blutung hüten; allein ein Ausfluss des Blutes, der von der Gewalt des Wundarztes abhängt, wird vortheilhaft, und verhütet wahr scheinlich das Aufschwellen, Entzündung und Brand der Gebärmutter." Lauverjat's Neue Methode den Kayserschnitt, &c. page 192.

" As soon as we perceive the *placenta,* we should detach a part of it; and having covered the wound with a glass funnel, moderately warmed, we should suffer such a quantity of blood to escape, as is judged necessary to unload the uterine vessels sufficiently. This opinion is very different from that of the authors, who have written on the Cesarean section. All of them directing us to avoid the placenta, for fear of the hemorrhage, which might arise from injuring it. We ought, beyond all doubt, to guard against hemorrhage; but a discharge of blood, which is obedient to the will of the surgeon, is of service, and is the most probable means of preventing tumefaction, inflammation, and gangrene of the uterus."

It is proved then, that Parés objection to the operation, as given in your quotation, are theoretical, and therefore not worth attention in a case of this importance.

Let us now attend to what his pupil, the celebrated Guillemeau, has to offer upon the subject. And I must here inform you, that he does not, as Paré has done, deny the possibility of a recovery after the Cesarean operation; on the contrary, he admits, that it had been performed successfully, even at the early period in which he wrote: But he contends that "we ought not to judge of the spring from the appearance of one swallow, nor construct a science upon a single experiment." "D' une seule arondelle on ne peut juger le printemps, ny d' une seule expérience l' on ne peut faire une science." De la Grossesse, et Accouchment des Femmes, page 228. 8vo. 1643.

It is not at all surprising, that the cases, in which Guillemeau operated, should have a fatal event, when we consider how much he and Paré were prejudiced against this mode of delivery; for we may thence fairly infer, that they had first employed every other method; and that the subjects of the operation were in a very dangerous situation at the time it was resorted to. That this was really the case, however, I will not venture to assert, because neither the state of the patients, nor any other particulars are given, from which a proper judgement can be formed.

For what reason you have forced into your

book, at page 13, an extract from an Act of Parliament, passed in the year 1511, I cannot possibly conjecture, unless it be to insinuate that you are *cunning*, and all the Accoucheurs in Manchester *uncunning*.

We now come to Mauriceau, from whose Traité des Maladies des Femmes Grosses, &c. you have introduced quotations, which fill up seven pages of your work. And yet you have been guilty of the most shameful mutilation, I am acquainted with. Please to take up your *Reflections*, and look at page 17, line first, whilst I shew, that there ought to have been inserted between the words *follow* and *However*, a most material passage. After mentioning the opinion of Paré, that there is no possibility of the woman's surviving the Cesarean operation, Mauriceau proceeds thus, "à quoi j' ajoûteray, que ceux qui pratiquent cette horrible operation, ne l' entreprennent ordinairement qu' aprés qu' une femme a été durant plusieurs jours en travail, sans pouvoir accoucher, au quel temps la matrice a beaucoup souffert par quantité de douleurs inutiles, qui lui ont causé une inflammation de toute sa substance, la quelle venant pour lors à être incisée, s' enflamme encore davantage, et ne manque pas de contribuer toujours à la mort certaine de la femme." Page 353. Ed. V. *a Pa-*

ris, 1712. "To which I will add, that those, who practise this cruel operation, do not in general undertake it, till after the woman has been several days in labour, without a possibility of delivery; during which time the womb has suffered greatly from the number of fruitless pains, and has become inflamed throughout its whole substance; which being then incised, the inflammation is encreased, and does not fail to contribute to the certain death of the patient."

You see, Sir, the honest indiscretion of Mauriceau has led him in this passage, to point out the hard labour, and previous inflammation of the uterus, as contributing to the fatality of the event; and has afforded you a most admirable opportunity of displaying your superior finesse, by omitthe whole of it, without breaking the continuity of the quotation.

Throughout the whole of your performance, instead of conducting yourself with candour, like a medical philosopher, employed in the investigation of a truth, in which humanity is deeply interested; in which even the existence of many fellow-creatures is involved; you have acted the part of a subtle, and disingenuous advocate in a bad cause. You have kept entirely out of sight

the most material evidence against you. You have cast unfounded reflections upon the characters, and have thrown out the most injurious insinuations against the credibility, of those witnesses, which you have permitted to come forward on the opposite side of the question. And you have actually stopped the mouths of your own witnesses, whenever they have attempted to reveal any thing, that would injure the cause, in which you have been engaged. You have treated *Dionis* in the same manner, as the preceding author. You have brought forward, what he has been pleased to advance respecting the cruelty, and fatality of the operation; but you have suppressed his reasons for condemning it. These, therefore, I must take the trouble to bring forward, and I shall from them be enabled to demonstrate, that his opposition rested upon theoretical grounds, unsupported by any material facts. He says, " S' il est vrai qu' une égratignure faite par un coup d' ongle à la matrice, y cause des inflammations, & souvent la mort, & qu' un ulcere pour petit qu' il soit, y devient presque toujours incurable, quelle suite facheuse ne doit on pas attendre d' une incision longue de six à sept pouces? Ceux qui l' approuvent avancent deux choses qui ne s' accordent point avec l' expérience; l' une que la femme ressent très-peu de douleur quand on lui coupe la

matrice, & l' autre que l' hemorrhagie qui en arrive n' est point si grande qu' on se l' imagine. La sensibilité de la matrice détruit le premier préjugé, puisque de l' aveu de toutes les femmes les douleurs qu' elles ressentent à cette partie sont insurmontables, & un leger ulcere y est infiniment plus douloureux qu' en aucun autre endroit du corps : le grand nombre de vaisseaux qui arrosent l' uterus, & leur grosseur dans le tems qu' il renferme un enfant, condamnent la seconde raison qu' ils alléguent ; car s' ils avoient ouvert une femme morte dans cet état, ils seroient surpris d' y voir tant de veines & d' arteres ; & ces vaisseaux qui lorsqu' une femme n' est point enceinte ne passent point la grosseur d' une petite corde de luth, ont sur la fin de la grossesse, acquis le diametre d' un gros tuyau de plume à écrire. Le moyen donc de couper tant de canaux remplis de sang, & d' empêcher en même tems qu' il n' en sorte une abondance terrible. Ce qu' ils repondent à cet article n' est nullement recevable ; ils disent que l' enfant n' est pas plutôt tiré de la matrice, qu' elle commence à reprendre son volume ordinaire, & qu' en se rétrécissant elle bouche les orifices des vaisseaux, que l' incision a ouverts ; mais cette organe ne se reserre que peu à peu, & il lui faut deux ou trois jours au moins pour revenir dans son état naturel ; & dans l' espace d' une demi-heure au plus, une femme

pourra perdre son sang jusqu' à mourir." P. 154. That the reason, drawn from the danger of hemorrhage, upon which he lays so much stress, although he has brought forwards no fact, except an experiment upon the dead female, is of little avail, I have already shewn at p. 44 and 45. when reviewing the opinions of Paré. And that his assertion, respecting the great sensibility of the uterus, when divided by a sharp instrument, is equally unfounded, I can prove from the respectable practitioners, who were present at the two operations, which I have performed, for the poor unfortunate patients scarcely uttered a complaint, and informed me afterwards, that the pain was not equal to the pains of labour. And yet the sensibility of these patients was not diminished at the time; since my latter patient, in particular, felt most exquisite pain, and complained most piteously, on a common examination *per vaginam*. Were it necessary to adduce other testimony, I have it in my power. See Med. Obs. & Inq. V. 4. P. 265.

It has often been the fate of Girolamo Mercurio, commonly named *Scipio Mercurius*, to be misrepresented, and I should have been extremely surprised, if, contrary to your usual practice, you had done justice to him. I will first state, what you bring forward concerning this author at p. 24,

and then introduce him, to speak for himself, and deny the charge. " What Scipio Mercurius mentions of his own time, would seem to be true of the present, both in France and Germany, namely, that the Cæsarean section was as common in France, as bleeding for the head-ach was in Italy. If there has been no design to deceive, their extraordinary accounts can only be explained on the supposition of an abuse of terms; and instead of alluding to the extraction of the fœtus by the Cæsarean section, the delivery of the child by instruments in all difficult labours must have been intended."

" Io mi ritrovava in Francia l' anno 1571, & 1572, e ragionai molte volte sopra questo soggetto della difficoltà del parto nascente della mole del corpo della creatura con parecchi medici, e cirugici di quel paese, certamente dottissimi, i quali mi dissero, ch' era cosa facilissima aiutare le creature in caso tale, e mi lodarono quel taglio, che si può fare nel ventre della gravida dal lato destro, ò sinistro senza nessun pericolo cosi della madre, come del figlio; detto parto Cesareo dal cedere, ò tagliare il ventre. Questo da me benissimo considerato nelle parti, che si fa, non mi pareva impossibile: ma come cosa nuova in Italia, & a me, che mai l' haveva non solo veduto a fare, ma nè anco udito, arre-

cava gran maraviglia, e perciò desiderai sommamente di vederne qualche esperienza. Onde appresso Tolosa in una terra molto nobile detta Castel nuovo di Arri, per opra di un Cirugico dell' Eccellentissimo Sig. Scipione Duca di Gioiosa, allhora generale del campo della Lega in Linguàdocca vidi due donne, alle quali erano state cavate le creature vive dal ventre con questo taglio, & una di loro mi disse d' essersi dopò di nuovo ingravidata, e di havere partorito felicemente. Questo sò io chiaramente: perche ho veduto le cicatrici nei lati del ventre longhe mezo piede, e *questa attione è cosi nota per quei paesi, come in Italia il cavare sangue nelle doglie di testa.*" La Commare o Riccoglitrice.- Pag. 207.

" Being in France in the years 1571 and 1572, I conversed several times with different learned physicians and surgeons, upon the subject of difficult births, arising from the bulk of the child. They informed me, that it was a very easy matter to give assistance in such cases, and recommended the operation, which may be practised on either side of the abdomen of a pregnant woman, without any danger either to her, or the child, and which is named a Cesarean Birth from the incision in the abdomen. Upon mature consideration of the parts concerned, this did not appear impossible to me: But as it was a new thing in Italy, and greatly astonished me, who,

so far from having seen it performed, had not even heard of it, I desired to see some proof of it. And, by means of the Surgeon to his excellency Sig. Scipio Duke of Joyeuse, at that time general of the camp of the League in Languedoc, in a considerable town (or fine district ?) named Castelnaudary, I saw two women, who had been delivered of living children by this operation, and one of them told me, that she afterwards conceived, and had a happy delivery. This I know clearly, because I saw the cicatrices, which were six inches long, in the sides of the abdomen: and *this operation is as well known in those countries, as bleeding in cases of head-ach is in Italy.*" There would, I apprehend, be no impropriety in saying, that Amputation is an operation *as well known* in England as Bleeding: but it surely does not follow from thence, that it is as frequently performed. Perhaps there are few, even in England, who have not heard of children being cut out of the sides of their parents, so that what has been said of amputation, might be extended also to the Cesarean operation. Had Heister known the meaning of the passage, given above, he might have spared himself the trouble of an attempt to account for the supposed circumstance, *from an abuse of terms*, " Atque hoc sensu si embryulcia, sive extractio fœtus per vias naturales per abusionem & male pro hysterotomia sive ex

sectione fœtus sumitur, aliquo modo forte verum est, quod *Scipio* MERCURIUS tradit *exsectionem fœtus suo tempore adeo vulgarem atque usitatam fuisse in Gallia, quam sanguinis missionem contra capitis dolores in Italia.*" Heisteri Chir. P. ii. Sect. v. Cap. cxiii. § 15. And he might also have spared you the trouble of copying him. Before we attempt to assign a reason for any circumstance, it is proper to be well assured, that the fact exists, otherwise our ingenuity may frequently be very much misapplied.

Your *Reflections* upon one of the latest, and most respectable French writers, on the subject of midwifery, next claim my attention.

This Author is the celebrated M. Baudelocque, who has published an excellent Treatise, entitled L' Art des Accouchemens, en deux tomes. At page 24, you make the following observation. " But on the Continent they talk so familiarly of the Cæsarean section, it might be reasonably inferred, that the mother incurr'd little hazard in undergoing it; and their writings would lead to an opinion that it is even less dangerous to her than the crotchet." And you refer to Boudalocque, Vol 3. page 217. At page 25, you say, " There is a want of consistency in the most recent accounts of this ope-

ration, for whilst the French practitioners speak lightly of it, and assert that it is less dangerous to the mother than the crotchet, they also tell us, that it is generally fatal to the parent." And you refer to Vol. 3. page 219, of the same author. Again, at page 33, You have the following passage, " In a note, Boudalocque mentions several instances in which the operation had been successful, but it will be enough to satisfy the intelligent reader to extract his notice of the last case, as taken from the *Journal de Medicine* for 1770. " The surgeon having made the external incision too high, made another obliquely under it, &c.—he afterwards made three stitches in the *uterus*, and the operation had all possible success." System of Midwifery, vol. 3. page 361."

That a writer, when he can not read, or has not access to, an author in the original language, should be indulged in the use of a translation, is very allowable; and the proper return for this favour is, I presume, to make fair quotations from the translation used. Had you done this, some of the observations, which I am now going to make, would have been unnecessary. From your referring to the third volume of Baudelocque, it is evident that you have used a translated copy, for the original is in two volumes

8vo. And as, I believe, we have no other translation of the work into the English language except Heath's, I suppose that to be the work you quote, but I cannot be quite certain of this; because your references, if made to the translation above-mentioned, published in 1790, are sometimes erroneous.

Speaking of the danger, arising from the application of *crotchets* and *other instruments* employed for opening the skull, and evacuating the brain, Baudelocque says, § 1973, " Ils ne sont indiqués exclusivement que dans le cas où l' enfant ne peut passer entier à travers le bassin ; & *encore cessent-ils de l' être, lorsque cette cavité est resserrée au point de n' avoir qu' un pouce & demi, même deux pouces de petit diamètre : car la section de l' enfant dans le sein de sa mère pourroit alors devenir aussi dangereuse pour elle, & même plus, que l' opération césarienne* à laquelle on voudroit la soustraire par ce procéde." Nouvelle édition, 1789, à Paris. " They are never exclusively indicated, but in those cases where the child cannot pass whole through the *pelvis; and even then they cease to be applicable, when that cavity has but an inch and an half, or even two inches in its little diameter : for the section of the child in the womb might then become as dangerous to the mother, and even more so than the Cesarean operation,* to rescue her from

which would be the view in performing it." Heath's Trans. V. iii. p. 218 and 219. This, I presume, is the passage first quoted by you, I will next take § 1975, which I suppose to be the second passage, referred to in your letter. Speaking of the danger to be apprehended, on the part of the mother, from the Cesarean operation, he says, " Si l' on n' avoit d' autre but que la conservation de l' enfant, il faudroit donc préférer cette méthode aux autres, toutes les fois qu' on a lieu de craindre quelques obstacles à l' accouchement par les voies ordinaires : mais la mère ayant le même droit à la vie, & cette opération lui étant funeste le plus souvent, quelque soin qu' on prenne pour en assurer le succès, on ne doit la pratiquer qu' autant qu' elle est évidemment nécessaire & que l' accouchement ne peut se faire autrement. Si la mort de l' enfant doit seule nous autoriser à le démembrer dans le sein de sa mére, lorsqu' il n' en peut sortir entier ; sa vie seule devroit aussi, dans le même cas, nous autoriser à faire l' opération césarienne. *Nous en excepterons cependant celui où le bassin est resserré au dernier point, c' est-à-dire, où son petit diamètre est au-dessous de deux pouces : car il ne reste alors d' autre ressource que l' opération césarienne pour délivrer la femme :* il est malheureux, lorsque son enfant est mort, de n' avoir à lui présenter qu' un cadavre, pour prix de sa resignation, & du sacri-

fice qu' elle fait en quelque sorte de sa propre vie. Si elle court le plus grand risque de la perdre à la suite de l' opération césarienne, elle seroit bien moins sûre de la conserver, si on ne la délivroit pas de cette manière ; comme on le verra à l' article où nous traitons de la rupture de la matrice, & des grossesses extra-utérines." " If we had no other view but the preservation of the child, we should therefore prefer this method" (the Cesarean operation) "to the others, whenever there is reason to fear any obstacles to delivery by the usual passage: but the mother having the same right to life, and this operation being generally" *(le plus souvent,* most frequently) " fatal to her, whatever care we take to assure its success, it ought not to be practised but when evidently necessary, and when delivery cannot be performed otherwise. If nothing but the death of the child can authorize us to dismember it in the womb of its mother, when it cannot be extracted entire ; so also its life alone can justify the Cesarean operation, in the same case. *I however except that" (those cases)* "*where the pelvis is contracted in the highest degree, that is to say, where its small diameter is under two inches : for then there is no other resource to deliver the woman, but the Cesarean operation.* It is unfortunate when her child is dead, to have nothing to present her but a corps, for the reward of her resignation, and the sacrifice which she in

some measure makes of her own life. Though she runs an exceeding great risk of losing it in consequence of the Cesarean operation, she would be much less sure of preserving it, if she were not delivered in that manner; as we shall see in the article which treats of the rupture of the *uterus* and of *extra-uterine* pregnancies." Heath's Translation. Vol. iii. p. 220 and 221.

I shall now transcribe the note referred to. " Un Chirurgien du village d' Attichi, près Compiègne, qui avoit déjà fait l' opération césarienne avec succès, la pratiqua une seconde fois en 1772, et tout aussi heureusement pour la mère, en faisant l' incision extérieure transversalement entre l' ombilic, & le dessous des fausses côtes du côté droit. J' ai eu occasion de connoître ce Chirurgien quelques mois après cette opération, il ne put me rendre compte des raisons qui l' avoient determiné à opérer: la femme est accouchée très-naturellement depuis. M. *Tallibon*, Chirurgien très-connu à Dourdan, m' a envoyé la note d' une autre opération césarienne faite de la même manière, il y avoit environ quinze ans alors, par le nommé *Sanson* à la femme d' un Vigneron du village de Roinville-sous-Aunau, diocèse de Chartres. L' incision fut faite transversalement à un demi-pouce au dessous de l' ombilic. M. *Tallibon* vit la femme le surlendemain de l' opé-

ration : celle-ci eut tout le succès qu' on pouvoit en attendre. On en trouve un autre exemple encore plus surprenant dans le Journal de Médec. de 1770. Le chirurgien ayant fait l' incision extérieure trop haut, en fit une autre obliquement en dessous, &c. il pratiqua ensuite trois points de suture à la matrice, & cette opération eut tout le succés possible." Tome ii. p. 570 and 571.

" A Surgeon of the village of *Attichi*, near *Compiègne*, who had already performed the Cesarean operation successfully, performed it a second time in 1772, and as fortunately for the mother, making the external incision transversely between the *umbilicus* and the under part of the false ribs on the right side. I had an opportunity of being acquainted with that surgeon a few months after the operation ; he could not give me any reason why he performed the operation : the woman has been delivered very naturally since. *M. Tallibon*, a surgeon very well known at Dourdan, sent me an account of another Cesarean operation performed in the same manner, about fifteen years before, by one *Sanson*, on the wife of a farmer, of the village of *Roinville-sous-Aunau*, in the diocese of *Chartres*. *M. Tallibon* saw the woman the second day after the operation : it had all the success that could be expected from it. We find another example still more

surprising in the *Journal de Médecine* for 1770. The Surgeon having made the external incision too high, made another obliquely under it, &c. he afterwards made three stitches in the *uterus*, and the operation had all possible success." Heath's Translation, Vol. iii. p. 361.

If you will read attentively the extracts, given above from Baudelocque, or his translator, you will find that you have again been guilty of making very egregious misrepresentations. M. Baudelocque says nothing in the places referred to that can subject him to the charge of inconsistency. He never speaks lightly of the Cesarean operation. He does not assert in *general and unqualified terms* that the operation is less dangerous than the crotchet. He says that "*they* (meaning crotchets and other instruments used for perforating the cranium, and evacuating the encephalon) *cease to be applicable when that cavity has but an inch and an half, or even two inches in its little diameter: for the section of the child in the womb might then (alors), become as dangerous to the mother, and even more so than the Cesarean operation.*" Finally, he does not say any thing in the note, which can lay him open to the charge of credulity. How can you make an attempt on such slight grounds, to set aside the testimony of this estimable writer?

The opinions of Dr. William Hunter, respecting the comparative value of the lives of the Parent and Infant, I shall notice in a future publication; and shall therefore pass on to page 28th of your work, where you make the following observation. "The Cæsarean section, Doctor Osborn informs us, has been performed eleven times in this kingdom (nine of which cases have been published), and it has proved fatal in every instance. I believe others might be added, which have occurred since the publication of this work, but they have been attended with the same fatal event."

At pages 29 and 30, you say, "Notwithstanding this cheerless prospect, it is admitted to have been successful on the Continent in one or two instances; and as it is limited to those cases, where all other means fail, shall we not be governed by the axiom, that a doubtful remedy is better than none?

To what cause soever the difference of result be owing, whether to a difference of climate, as above-mentioned, or to some more hidden cause, it does not seem material to investigate; for although it has lately been asserted to the contrary, the operation has certainly proved fatal in every instance in this country. And here I shall take

occasion to observe, that in a matter so important, newspaper intelligence ought not to be relied on; a case thus announced some time ago, and lately published as a successful case of the Cæsarean operation, I find on enquiry to be essentially different.

Considering then the Cæsarean operation either analogically, or as having been uniformly fatal in this country, it must be abandoned, or as Doctor Osborn observes, the patient will be *doomed to inevitable destruction.*"

To *you* it may not perhaps seem material to investigate the causes of the difference of result in the event of the Cesarean operation: But to *me*, and to medical men in general, I should suppose, it appears a matter of the highest importance. I have, on that account, pointed out in a general way at page 10th, the causes, to which the greater proportion of deaths, occurring after it in this Island, are to be attributed; and I shall now endeavour to shew why most of the fatal cases could not be expected to have a different event.

A Synoptical table of the Cases of Cesarean Births, in which the Mothers died in Scotland.

Case	Year	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, &c. &c.
1	1737	Mr. Rt. Smith, Edinburgh.	— Paterson.	7 days.	No previous disease is mentitioned, but the protracted labour must induce us to believe her much exhausted, &c.	The Child born dead. The mother died eighteen hours after the operation. The Body was not inspected. See Smellie's Midw. V. iii. p. 423.
2		Prof. Young, Edinburgh.	No account.	No account.	Much exhausted by violent vomiting, which had continued 3 weeks.	The Child born alive, although its head was so firmly wedged in the pelvis, that it was necessary to employ force *per vaginam* to push it back. The mother died. Dr. Dobson's Copy of Young's Lectures.
3		Prof. Young.	No account.	No account.	A violent cough, which was very harassing after the operation, and is stated by the Dr. as having induced inflammation.	The Child born alive. The mother lived 3 days. Appearances on dissection not mentioned in either case. Ibid.
4		Mr. Alex. Wood, Edinburgh.	No account.	No account.	No account.	The Child died. It is not stated whether it was born dead.
5	1774	Mr. Wm. Chalmers, Edinburgh.	Eliz. Clerk.	12 days.	Had laboured under Ischuria for 2 days, bladder somewhat inflamed.	The Child born alive. The mother lived 26 hours. The Body not opened. See Hamilton's Outlines, p. 339. 1784.
6	1775	Mr. Wm. Whyte, Glasgow.	No account.	No account.	No account.	The Child died. It is not stated whether it was born dead.
7	1795	Dr. James Hamilton, Jun., Edinburgh.	Jean Douglass.	More than 2 days.	She had been afflicted with Malacosteon for some years, was much exhausted, abdomen tense, and painful, pulse small, quick, rigors frequent and severe.	The Child putrid. The mother died 31 hours after the operation. The abdomen distended, the intestines slightly inflamed. See Hamilton's Outlines. Last edition. 1796.
8	1798	Mr. Kay, Forfar.	No account.	More than 3 days.	Afflicted with Malacosteon, confined to her bed 6 or 7 months before her labour, unable to move any of her extremities without assistance.	The Child born alive. The mother lived till the 11th day. She did not compain of any uneasiness from the wound; the Lochial discharge passed *per vaginam* in the usual quantity.

A Synoptical Table of the Cases, in which the Mothers died after the Cesarean Operation in England.

Case	Year	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient.	Event of the Operation, &c. &c.
1	before 1740	Dr. White, Manchester.	—— —— of Rochdale.	No account.	No account.	The Child born dead. The mother died—Nothing more is known of this case.
2	1769	Mr. Thompson, London.	Martha Rhodes.	More than 24 hours.	No previous disease.	The Child born alive. The mother died five hours after the operation. No inflammation of the viscera. About 20 oz. of coagulated blood in the abdomen. See Lond. Med. Obs. and Inq. V. 4.
3	1774	Mr. Hunter London.	Mrs. Eliz. Forster.	More than 2 days.	She had been afflicted with Mollities Ossium more than ten years, and was become an unwieldy lump of living flesh.	The Child born alive. The mother lived almost 26 hours. The bones of the pelvis were extremely soft, and spongy. See Lond. Med. Obs. and Inq. V. 5.
4	1777?	Mr. Atkinson, Leicester.	Elizabeth Hutchinson.	Nearly 3 days.	She had been afflicted with Mollities Ossium, for a considerable time, and was extremely exhausted.	The Child was born alive. It presented the nates at the Os Uteri. The mother lived more than three days, notwithstanding a portion of the intestine had for some time been protruded thro' the wound. A small portion of the Int. Ilium was found inflamed, &c. See Vaughan's Cases of Hydrophobia.
5		Mr. Clarke, Wellenborough, Northamptonshire.			Considerably exhausted by pains, which had continued more than 8 days.	The Child born dead. The mother died about four hours after the operation. This was a *ventral* case. See Mem. of the Med. Soc. V. 3
6	1794	Dr. Hull.	Isabel Keuman of Blackburn.	12 hours.	Had laboured under Mollities Ossium nearly 7 years, &c. &c.	The Child healthy. The mother lived nearly 22 hours after the operation. See the latter part of this Letter.
7	1798	Dr. Hull.	Ann Lee, of Manchester.	10 days.	She was much exhausted, &c. &c.	The child born dead. The mother only lived about 6 hours See the latter part of this Letter.

A Synoptical Table of the Cases, in which the Cesarean Operation has preserved the Life of the Mother in Great Britain, and Ireland.

Case	Year	Names of the Operators.	Names of the Patients.	Duration of Labour.	State of the Patient..	Event, &c.
1	Jan. 1738–9	Mary Donally.	Alice O'Neal, near Charlemont, Ireland.	12 days.	No particulars are given, respecting the state of this poor woman, at the time she underwent the operation.	The Child dead. The mother, in about 27 days, walked a mile on foot. She was examined by Mr. Duncan Stewart, Surgeon, who relates the case. See Edinb. Med. Ess. V. 5.
2	1793	Mr. Barlow, then of Chorley, Lancashire; now of Blackburn.	Jane Foster, of Blackrod.	5 days.	Dyspnœa, great anxiety, pulse full. Her labour pains had left her, but she had pain in the epigastric region. The Deformity of the pelvis (which was in an extreme degree) was occasioned by a loaded cart passing over her pelvis.	The child dead. The wound healed in about 6 days; and in 20 days she was able to attend to her domestic employments. See Medical Records and Researches, p. 154. In this case that species of Cesarean Operation, which is named *Gastrotomy*, was performed; the Uterus having been ruptured by the violence of its own contractions.

From a perusal of the fifteen cases, given above, in which the mother did not recover, it appears evident, that

Five of the women, besides other complaints, were afflicted with the disease named *Malacosteon*, or *Softness of the Bones*, a disease from which I do not know of any recovery, namely, Jean Douglass, Mr. Kay's Patient, Mrs. Elizabeth Forster, Elizabeth Hutchinson, and Isabel Redman ;* that

Five were much exhausted by the long continuance of labour, or by severe vomittings ; or previously endangered by the inflammation of some abdominal viscus ; namely,—Paterson, Dr. Young's former Patient, Elizabeth Clerk,

* From the annexed description of the Pelvis of one of Prof. Young's patients, given by Prof. Hamilton, it is also extremely probable, for reasons which will be given hereafter, that the distortion was induced by Malacosteon : But I do not know to which of the patients it belonged. " The transverse diameter at the brim does not measure above $1\frac{3}{4}$ inches at one side ; the bones of the pubes are bent, and refuse admittance to a finger at the arch ; the sacrum is convex anteriorly, the anchylosed coccyx is angulated ; and the distance from it to the tuberosities of the ischia is somewhat less than $1\frac{3}{4}$ inches. In a pelvis of this construction, where the bottom, and indeed whole capacity, are affected by the distortion, embryulcia could scarce be attempted." Outlines, &c. p. 327. 8vo. 1784.

Ann Lee, and Mr. Clarke's Patient. The last was also a case of *ventral conception*, and was more dangerous on that account, as shewn at page 42; that of

Four we cannot form any tolerable judgement, the particular circumstances, attending them, not being related, namely Dr. Young's latter Patient, Mr. Alexander Wood's Patient, and Dr. Thomas White's Patient; and that

One was in a state, apparently favourable to the operation, namely Martha Rhodes.

The number of children born alive, of these fifteen unfortunate females, is eight at the least, and if the operation had been submitted to in due time, it is very probable, that all of them might have been preserved, for in no kind of birth is the child so little exposed to injury, as in the Cesarean.

The Kingdoms of Great Britain and Ireland are therefore indebted to the Cesarean operation, for the lives of eight children, and two women, who would in all probability have sunk under the unavailing pains of labour, or the attempt to perform the operation of embryulcia; since the

attendant practitioners saw no possibility of saving any of them by that mode of practice.

I would here ask you, Whether you do not believe, that both the parent and child would have died (the children most certainly would have been destroyed) in every case, if they had been treated in the manner recommended by you? And, Whether an operation, which has in so many instances, even in Great Britain, preserved the lives of our fellow-creatures (and which, if seasonably performed, would have preserved a much greater number) under circumstances so desperate, is not a valuable resource, aud entitled to a distinguished place amongst the Means of Surgery?

Whatever your answer may be, I trust, few practitioners will be found, who will join with you in saying, as it is expressed at page 68, "I hope that in future all trace of the Cæsarean operation will be banished from professional books; for it can never be justifiable during the parent's life, and stands recorded only to disgrace the Art."

After asserting that the operation has certainly proved fatal, in every instance, in this country, and that newspaper intelligence ought not to be relied

on, you add, " a case thus announced some time ago, and lately published as a successful case of the Cæsarean operation, I find on inquiry to be essentially different." I find also that one of the cases, which you bring forward from Dr. Osborn's Work, as an unsuccessful case, has a much less claim to the title of a Cesarean operation, if you chuse to limit it to a division by the knife, both of the Parietes of the Abdomen and Uterus, or in other words, if you make it synonymous with *Hysterotomia*. For in the case, which occurred to Mr. Clarke of Wellenborough in Northamptonshire, the *conception* was, beyond all possibility of doubt, *ventral*, the placenta being attached to the kidneys, intestines, &c. of the mother. And yet you do not, on that account, chuse to leave it out of the catalogue of unsuccessful cases. Why then do you deny a place amongst the successful ones to Mr. Barlow's case?

The case, to which you allude, must, from the circumstances mentioned, be the case of Jane Foster, related in the Medical Records and Researches, page 154, &c. She was attended by Mr. Barlow, formerly one of my pupils. I suspected from the first, that Mr. Barlow was deceived in this case, from the account he gave of the remarkable thinness of the Uterus. And I had formed an opinion, that the child had escaped

through a laceration of the uterus, into the abdomen envelopped in the Secundines, and that he had merely divided the membranes, when he fancied he had divided the uterus. On corresponding, however, with Mr. Howarden, a very intelligent practitioner at Blackrod, who assisted at the operation, I learnt the following important circumstances, in reply to my queries. viz. that "after having divided the *cutis*, *membrana adiposa*, and *muscles*, Mr. Barlow made a small opening through the *peritonæum*, which he gradually enlarged with an obtuse-pointed knife;" that "upon the opening being made through the *peritonæum*, the fœtus presented itself at the wound, so as in a manner to exclude the the external air, and prevent any prortusion of the intestines;" that "the child was most certainly in the general cavity of the abdomen, and neither in the *uterus* or the *fallopian tubes;*" that "the *uterus* was supposed to give way about three o'clock on the Tuesday morning, preceding the day, on which the operation was performed; because at that period the pains were most exquisite, and she felt at that juncture, to use her own expression, *as if something had broken or given way within her*, and moreover her pain then removed to her stomach, where it continued, till the fœtus was extracted;" that "the fœtus was lodged in the

left side entirely, with the head up towards the lower part of the sternum, and the breech and thighs to the wound;" that " the *fœtus* and *placenta* were extracted without much difficulty ;" that " the hemorrhage was little more than is usual after a common delivery ;" that " he never saw the lacerated wound in the uterus, nor even the uterus itself;" and that " he is confident Mr. Barlow did not make any incision into the uterus." He further informed me, that he had not examined the poor woman *per vaginam*, and consequently that he was not acquainted with the dimensions of the pelvis, &c. &c.

This is an extremely important case, and, as there are but few similar ones recorded, I hope you will have the goodness to excuse my introducing here the account of three, given by Baudelocque, in § 2179 & 2180. " § 2179 Dans le fait de M. *Thibaut* les choses étoient des mieux disposées pour l' accouchement, & sembloient annoncer une prompte délivrance, lorsque la femme ressentit une douleur aigüe & très courte vers la partie supérieure & latérale gauche de la matrice, après laquelle la tête, qui se présentoit favorablement, disparut. Ne trouvant alors ni l' enfant ni le placenta dans ce viscère, M. *Thibaut* ne craignit pas de proposer la gastrotomie, & de faire connoître tout le danger qu' il y auroit à la dif-

férer. Il la fit, mais après quelques heures encore, ce qui la rendit inutile pour l' enfant. La femme n' en éprouva, pour ainsi dire, d' autres suites que celles d' un accouchement ordinaire."

§ 2180, " La gastrotomie, pratiquée deux fois sur la même femme, par M. Lambron, chirurgien d' Orléans" (le 3 avût 1775, sur la femme de Charles Dumont, Vigneron à S. Jean de la Ruelle près Orléans), "ne fut pas plus salutaire à l' enfant ; parcequ' on n' y eut recours la première fois que dix-huit heures après la rupture de la matrice. Mais la femme, au bout de trois semaines sembloit déjà toucher au terme de sa guérison, lorsqu' une tumeur de la grosseur du poing se manifesta à la région hypogastrique, & parut disposée à s' ouvrir, comme elle le fit en effet quatre jours après. Non obstant cet abcès gangréneux, par où il sortit dix-huit vers de la longueur de quatre à six pouces, & de l' espèce de ceux qui sortirent dans le même temps par l' anus & par le vagin, la femme put reprendre les travaux de la campagne après six semaines, à compter du moment de l' opération. Enceinte de nouveau l' année suivante, cette femme éprouva le même accident, l' enfant pénétra également tout entier dans le bas-ventre, & M. *Lambron*, témoin du fait, pratiqua une seconde fois la gastrotomie ; en n' y mettant alors d' autre délai que celui qu' exigea la

malade pour se faire administrer les sacremens. L' enfant donna des signes de vie pendant une demi-heure après l' opération & celle-ci eut les suites les plus simples. La femme *Dumont* redevint encore grosse, & accoucha naturellement d' un enfant bien portant".

" § 2179 In M. *Thibaut's* case, every thing was exceedingly well disposed, and seemed to announce a speedy deliverance, when the woman felt a sharp and very short pain towards the superior and left lateral part of the *uterus*, after which, the head which had presented favourably, disappeared. Not finding then either the child or the *placenta* in that *viscus*, M. *Thibaut* was not afraid to propose gastrotomy, and to demonstrate the danger of deferring it. He performed it, but not till after some hours; which rendered it useless to the child. The woman suffered, in a manner, nothing but the usual consequences of a common labour. § 2180. *Gastrotomy*, performed twice on the same woman, by M. *Lambron*, a surgeon of *Orleans*, was not more salutary to the child; the first time, because it was not performed till eighteen hours after the rupture of the *uterus*. But the woman at the end of three weeks seemed to be nearly recovered, when a tumour of the size of a fist appeared in the hypogastric region, and seemed disposed to open,

as in fact it did, four days afterwards. Notwithstanding this gangrenous abscess, out of which came eighteen worms from four to six inches long, and of the same species as were discharged at the same time from the *anus* and *vagina*, the woman resumed her labours in the fields in six weeks from the time of the operation. Being again pregnant the following year, she suffered the same accident, the child again passed entirely into the abdomen, and M. *Lambron*, who was present, again performed the operation of *gastrotomy*; without any further delay than what the woman demanded to receive the sacraments. The child gave signs of life during half an hour after the operation, and the subsequent symptoms were very mild. This woman became pregnant again, and was delivered naturally of a healthy child." Heath's Translation, page 430, &c.

We have here four cases, in which the children were cut out of the bellies of their respective mothers, after they had escaped through a lacerated wound of the womb, into the cavity of the abdomen. And as lacerated wounds are confessedly more dangerous than wounds made with a sharp instrument, these cases shew clearly, that a female will sustain, without the loss of life, an injury, greater than the Cesarean operation. If you should be inclined to deny this position,

with regard to wounds of the uterus; you must then acknowledge, that it would be an improvement, in performing this operation, to puncture the Uterus, and afterwards tear it in such a manner, as to allow the child to be extracted; and that it would be better to wait till the violent and repeated throes of labour had ruptured the uterus, before we make the incision through the parietes of the abdomen. Both of which declarations will be considered, I believe, by intelligent surgeons as highly absurd.

To point out to you still more clearly, that the death of the parent, after unsuccessful Cesarean Births, is often more properly imputable to previous injury, and disease, than to the operation itself; I shall here transcribe three very remarkable and well authenticated cases; which, I suppose, you have not read.

C. 1. " In the year 1769, *a negro woman* (belonging to Mrs. Bland, a midwife) at *Mr. Campbell's* grass plantation at the *Ferry*, between *Kingston* and *Spanish Town* in *Jamaica*, being in labour, she performed the *Cæsarean operation* on herself, and took her child out of the left side of her abdomen, by cutting boldly through into the uterus.

She performed this operation with a butcher's

broken knife, about two inches and a half long,—the part which joined to the handle. The position of the child was natural; she cut through near the *linea alba*, on her left side, and cut into the child's right thigh, which presented at the part, about three lines deep, and two inches and a half long. The child came out by the actions of his own struggling. A negro midwife was sent for to her, who cut the navel-cord, and freed the child, and returned the part of the navel-cord adhering to the placenta, and a considerable portion of the intestines also, into the abdomen, which had come out at the wound with the child.

The Surgeon who attended the plantation was sent for, a few hours after the accident happened; and judging, from the situation in which he found her, that some dirt had been put into the wound, by the old midwife, with the intestines, he cut open the stitches that had been made, and carefully washed the parts clean, extracted the placenta at the wound, and then stitched it up again.

On the third day after she had recovered from her sunk state from the loss of blood, which was considerable, a fever came on, which was removed by cooling medicines: she then took bark for ten days. The wound was fomented, and dressed

properly, and was soon cured; and the woman was well in six weeks time from the accident, and able to go to her work." Moseley on Tropical Diseases, &c. pages 98 and 99.

C. 2. "On the 25th June 1785, at eight o'clock in the morning, the relator of this case" (Don Antoine Zubeldia, a Spanish Physician) "was sent for with another surgeon, to the assistance of Mary Gratien, a robust woman, in the 9th month of her pregnancy, and who had been already the mother of many children. She was found weltering in her blood and in a state of fainting, from a wound she had received in the superior part of the hypogastric region from a bullock's horn. The horn had transversely divided the integuments of the abdomen and the peritonæum to the extent of eight inches, and allowed the uterus to pass out, which was wounded at its anterior part and in the same direction. The wound of this viscus, though deep, did not penetrate its cavity. Whilst the surgeons were disposing themselves to perform the operation, nature accomplished it, without any assistance, by exciting a violent hiccup, which produced a complete rupture of the matrix throughout the whole extent of the wound, and from which a dead child was expelled, the placenta, which was detached, was

extracted by the surgeon; the uterus immediately contracted, and regained its natural situation, &c."

"By the 21st day the patient found herself tolerably well, with only a little remaining fever, which disappeared a few days afterwards by a continuation of the same remedies. A collection of pus took place under the right transversalis muscle, which pointed towards the pyramidalis; this was discharged by a small opening. The ulcer became simple and cicatrized towards the end of the sixth week. This woman was cured in this manner of this dreadful accident, and was only subjected to the inconvenience of wearing a bandage, to prevent a ventral hernia. From this period she has enjoyed an excellent state of health, and has since lain in with two fine children, which she suckled." Gosling's Translation of the Parisian Chirurgical Journal, by M. Desault. Vol. ii. p. 277,—280.

Note. "The editor (M. Desault) observes, that he knew the woman, who forms the subject of this case. Three years after the wound he applied a proper bandage to retain a small ventral hernia, the only inconvenience that resulted from the accident." Ibid.

Case 3. "The subject of this very curious and extraordinary case was a poor woman, named Schulers, at Offdillen, in the principality of Dillenburgh, of a delicate habit of body, but in other respects healthy, who had already borne several children.

About two o'clock in the afternoon, of the 20th of October, 1779, being then in the sixth month of her pregnancy, she was gored by an ox in the lower belly. The horn of the animal penetrated the right hypogastric region, at the distance of about three inches from the linea alba, and wounded the body of the uterus.

Her husband, who saw her in this dreadful situation, holding by the other horn, flew to her assistance, and in disentangling her from the animal, unfortunately made a fresh wound, two inches in length, with the horn that was still sticking in the abdomen. This second wound, which was exactly in the direction of the linea alba, was attended with a laceration of the parts, and with a loss of substance, so as to form one common wound with the first.

A considerable hemorrhage ensued; and on examination, the right arm of the fœtus was found protruding through the wound.

Dr. Fritse, whose assistance was called for, but who did not get to her till ten hours after the accident, found her strength, he tells us, less sunk than, considering the nature of the case, might have been expected; the hemorrhage, which at first was considerable, had almost entirely ceased, her pulse had still a certain degree of fulness, and her breathing was not materially affected.

After having duly considered all the circumstances of the case, being convinced of the necessity of having recourse to the Cæsarean operation, as the only probable means of preserving the life of the patient, he communicated this opinion to her in a proper manner, and she with great firmness determined to submit to it.

As it was now past midnight, and no symptoms were present that indicated a necessity of performing it immediately, he thought it better to defer the operation till morning, than to attempt to perform it by candle-light. He, therefore, employed himself during the remainder of the night, in directing the patient's chamber to be properly ventilated, in administering to her such remedies as her case seemed to require, and in securing the wound, as much as possible, from the external air.

At seven o'clock, the next morning, after having passed a very restless night, she voided her urine without any considerable pain; but as she had had no stool during the last four-and-twenty hours, it was thought right, previously to the operation, to administer a clyster, but it failed to produce the desired effect.

The patient being now placed in a posture convenient for the operation, and properly held by four assistants, the operator placed himself on her left side, that he might have the free use of his right hand.

He first introduced his left fore-finger into that part of the wound where the horn of the ox had penetrated into the cavity of the abdomen, and which, as hath been already observed, was three inches distant from the linea alba, and about as far from the abdominal ring.

After having sufficiently enlarged the wound, with the point of his scalpel, to admit another finger, he introduced into it his middle finger; and then, cutting through the right musculus rectus abdominis, and the peritonæum, enlarged the wound three inches, in a straight line upwards towards the navel: after which, taking hold of the knife with his left hand, he carefully

cut downwards, to the extent of an inch, towards the right abdominal ring.

The opening in the abdomen being now sufficiently large to allow of the extraction of the fœtus, he began to examine the state of the uterus, and, by degrees, succeeded in introducing his right fore finger into its cavity, through the wound, which had so strongly contracted about the arm of the fœtus, and by this means was enabled to ascertain the situation of the child, and likewise to satisfy himself that the placenta was attached to the right side of the uterus, and not to the fundus.

Being thus convinced that he had nothing to fear from cutting through the fundus uteri, he introduced his fore and middle fingers between the uterus and the body of the child, and then cut through the body of the uterus and its fundus to the extent of four inches.

The fœtus was now brought out through the wound, though not without some difficulty, and much pain to the patient; as was also the placenta, which was found to be firmly attached. As soon as all this was accomplished, the operator again introduced his hand into the uterus to clear it of coagulated blood.

The head of the child was no sooner brought out through the external wound, than the colon began to protrude, but was kept up by one of the assistants till the operator had done with the uterus, and then he reduced it in the usual manner.

The integuments of the abdomen being now brought together, by means of the interrupted suture, as it is called, suitable dressings were applied to the wound, and secured by a bandage, three inches broad and eighteen ells in length.

The whole of the operation, we are told, including the application of the bandage, did not take up more than a quarter of an hour; and only twice, in the course of it, did the patient complain of pain, namely, when the head of the child was brought out through the wound of the uterus, and, afterwards, on the placenta's being separated. The loss of blood during the operation, is said not to have exceeded seven ounces.

The patient was now carefully placed, in an easy posture, in bed; a little wine was given to her to drink; and she was allowed to take freely of chicken broth.

About noon, a discharge of blood began to

penetrate a little through the dressings and bandage, but without any appearance of considerable hæmorrhage; and even at this early period the lochia were beginning to flow.

The only complaint the patient made was of pains like after-pains, which from her manner of living previously to the accident, it was thought might be occasioned in some measure, or at least increased, by impurities in the primæ viæ. Another clyster was, therefore, directed to be administered, but this, like the former one, came away without producing any evacuation of fæces. The bandage was moistened with vinegar and spirit of wine, diluted with water; and for the purpose of allaying thirst, she drank water acidulated with vinegar, and rendered palatable by the addition of syrup of raspberries. She also took, from time to time, small doses of nitre.

At two o'clock in the afternoon, the pains were not at all diminished, and she began to be troubled with nausea and eructations. Another clyster was therefore injected, but without the desired effect. At five o'clock, she complained of pain about her chest, and of an increase of the nausea, and about two hours afterwards, after vomitting bile, she found herself relieved, a gentle

perspiration took place, and she slept quietly during a considerable part of the night.

The day following, being the third after the accident, the bandage was suffered to remain undisturbed, for fear of occasioning a fresh hæmorrhage, and the same plan of treatment was pursued as on the preceding day.

In the forenoon of this day, she complained again of pain of the abdomen, and of a sensation as if this part was swelled; but, on examination, no enlargement or hardness of the belly could be perceived. She was frequently troubled with acid eructations, and her pulse was now much quickened.

As she had as yet had no stool since the operation, another clyster was administered, consisting of two parts water, one part vinegar, half an ounce of common salt, and a little linseed-oil. This very soon had the desired effect, to the great relief of the patient; a copious perspiration ensued; her breathing was free and natural ;and she got some more sleep.

About five o'clock in the afternoon, the pains of the belly and eructations again returning, she

drank an infusion of chamomile flowers, which she thought afforded her relief; but the most certain remedy, it is observed, for these complaints was found to be the clyster of water and vinegar; for, in the course of the treatment, she had frequent returns of the pains of the abdomen, acid eructation, nausea, and even vomiting, but these symptoms never failed, speedily to give way to the use of the sort of clyster just now mentioned.

On the fourth day, she was reported to have slept well during the night, but at eight o'clock in the morning was found to have a considerable degree of fever.

The bandage was now removed for the first time. The lips of the incised wound were in contact with each other, and slightly inflamed; those of the lacerated wound were an inch asunder, and greatly inflamed.

A decoction of myrrh in barley water, with the addition of a little honey of roses, was now injected into the cavity of the abdomen (a mode of practice, which will probably not accord with the ideas of the English surgical reader), and the same kind of bandage was applied as before.

Suitable remedies were given to moderate the quickness of pulse, thirst, and other symptoms of fever. The patient's common drink was water properly acidulated, and she also took chamomile tea, and a decoction of bark, with Hoffmann's anodyne liquor.

On the fifth day, the patient having passed a good night, and slept well, found herself much better. The hardness and quickness of pulse were much diminished; the uneasy sensation she had complained of in the abdomen had subsided; she had had a natural stool, had made water, and was now in a gentle perspiration.

The bandage and dressings were again removed; the injection into the cavity of the abdomen was repeated; and the abdomen was gently embrocated with a mixture of vinegar and oil of chamomile.

On the sixth day, the patient had three stools. The state of the pulse indicated an increase of fever; and the night following she was restless, and troubled with a frequent cough, which, she said, occasioned, every time she coughed, a smarting pain in the wound.

On removing the dressings this day, it was ob-

served that the ligature of the incised wound had so cut through the skin, that the lips of the wound were separated from each other at the outer surface, but that at the bottom of the wound an union of parts had taken place. As the ligatures, therefore, now seemed to be no longer of any use, they were removed, and the lips of the wound were kept together by means of slips of sticking plaster.

On the eighth day, the patient had two stools; the cough was less troublesome, and the wound was beginning to discharge a good pus.

On the fifteenth day, as the patient still complained at times of the cough, a few drops of laudanum were occasionally added to her medicines.

At this period, the wounds appeared to be in good condition, and the patient was in every other respect in a comfortable state; she slept well, the symptoms of fever had entirely subsided, her evacuations, by stool and urine, were natural; and her appetite for food had returned.

On the seventeenth day, a slight excoriation of the skin around the wound, occasioned by the

discharge, made it necessary to recommend a suitable topical application, which soon produced the desired effect.

On the twenty-fourth day, a considerable discharge of matter was observed on the bandages, and traced to a small abscess between the integuments, and the musculus rectus abdominis, which was soon healed by means of gentle compresses.

On the thirty-fourth day, the wound being almost completely healed, a proper bandage was applied to prevent a hernia; after which the patient, for the first time after the operation, walked about her chamber.

On the 21st of December, she was sufficiently recovered to return to her usual occupations; and towards the latter end of February, about four months after the operation, she came on foot to Dillenburgh, a fatiguing journey of two (German) miles." Lond. Med. Journal. Vol. 11th, p. 146, &c.

You ask at page 31, " but, shall a practice be persisted in, which has proved invariably fatal to the mother in so many instances?" and " Would it not be better that a woman should die undeli-

vered, rather than contrary to all precedent among us, and the rules of art, she should be consigned to such an end ?"

I cannot admit, even if Cesarean births were certainly fatal to the mother, that it would be better to allow both parent and child to perish, than to preserve the latter by the Cesarean operation.

Neither can I admit that the operation is *invariably fatal to the mother ;* and, in addition to the cases already mentioned, beg leave to refer you to the extensive collection of successful cases, given by *M. Simon,* in his *Recherches sur l' Opération Césarienne* inserted in *Memoires de l' Acad. Roy. de Chir. T.* 1. *P.* 3. to which you have never once referred, although I am informed, that the work has been very lately in your possession. And I will, as a further proof, insert the following extract from an excellent paper by Dr. Garthshore, in the 8th Vol. of the London Medical Journal.

" M. Tenon, Member of the Royal Academies of Sciences and Surgery, and Surgeon to the Salpetriere Hospital at Paris, equally eminent for his learning and long experience, informed me, when lately in this country, that in all ex-

tra-uterine cases, and in the greater part of those where the child has burst, either wholly or partially, through the uterus, the French accoucheurs constantly extract it through the divided parietes of the abdomen, and that they consider this, as by much the safest practice. He is of opinion, that the Cæsarean operation is less successful in this country than it is in France, because we defer it too long; and he assured me, that since their first practising this operation, in the time of Bauhin, *seventy-eight women have been saved by it at the Hotel Dieu of Paris.*"

You next proceed to say, "Life is in the hands of God! and as there are cases of recovery by the powers of nature, working an outlet by Abscesses, and in other ways, the only hope for the patient's surviving is by a reliance on her aid." I would here ask you if *the only hope* for the patient's surviving be, as you state, by a reliance on the aid of nature, how it has happened, that totally disregarding these powers of nature, you recommend an operation, or rather a combination of two operations, afterwards, in cases of such extreme deformity of the pelvis, that it would prove considerably more dangerous to the parent, than the Cesarean Birth, and be certainly destructive of the life of her offspring?

I must now step out of my way a little to bring forward what you have advanced, at page 39. "Tremendous as the operation is to the unhappy woman, it is simple to the operating surgeon. The unprofessional reader, who shall have witnessed the inspection of the abdomen of a dead body, will form a tolerable correct notion of the manner of operating, from what has been said above. It requires no more than a superficial knowledge of anatomy, and does not call for the exercise of manual dexterity. A surgeon, who is cool and collected, (without which he ought not to undertake any operation,) cannot but possess sufficient knowledge, and use of his hands, to perform it with propriety. The operation for the stone, for the strangulated hernia, and for the depression of the cataract, and many others, demand much superior skill and dexterity in the operator."

If by the latter part of this quotation you mean to intimate, that I have not performed all the operations there mentioned; permit me to inform you, that your insinuation is unjust.

We will now return, if you please, to consider what you say, at page 32 of your *Reflections*, on the evidence of Mr. Hoffman, and the state of surgery in Germany. You observe that, "Pro-

fessor Hamilton, says, Mr. Hoffman of Prussia informed him, that the Cæsarean operation had been very often successful in different parts of Germany, within the last ten years; and that the unsuccessful cases have been chiefly those in which the operation was delayed too long. Extraordinary as the account is, I should have given credit to it, had Mr. Hoffman spoken of the facts from his own knowledge, having seen him when in England; but the state of surgery in Germany is too well known to induce a belief of so unusual an occurrence, even if the alledged frequency of its success did not tend to destroy its credibility."

From reading the very curious passage, in which you attempt to overturn Mr. Hoffman's testimony, it would seem, he had told you, that he did not speak of the facts from his own knowledge; but on a little more attention, it only appears, that you saw him when in England. Admitting, however, that Mr. Hoffman had not spoken of the facts from his own knowledge, is his evidence, to be entirely rejected on that account? Is it not precisely on the same ground, that your evidence, and that of Dr. Osborn, whom you quote, with regard to the unsuccessful cases, rest? Have either of you ever been present at a Cesarean operation performed on a living female? How can you then reject evidence, which

appears more admissible than yours at least, since Mr. Hoffman has never, that I know of, been proved guilty of any misrepresentation?

Again, Do not the Surgeons of Germany perform the operation for the stone, and all the other nice operations of Surgery with success? And if so, Are they not properly qualified to perform the Cesarean operation, which, as you have affirmed, in the passage quoted above, "*requires no more than a superficial knowledge of anatomy, and does not call for the exercise of manual dexterity?* To what cause, Sir, are these glaring inconsistencies to be attributed?

When I read the works of Richter, Plenck, Brambilla, Roederer, &c. &c. I am induced to form a very favourable opinion of the state of Surgery, and Midwifery in Germany; and I sincerely hope, that the Germans will form their judgement of the state of these two branches of the healing art, in Great Britain, from other sources than your Reflections, or I fear, they will be rated low indeed.

At page 33, you make this observation, "And in Holland it was performed by the celebrated professor Camper, but one fatal case was suffici-

ent to satisfy him." Where you have learnt this, I cannot discover; But whatever might have been the sentiments of this deservedly illustrious author, upon the subject of Cesarean Births; I can assure you, that the operation is not laid aside in Holland. One instance of the most completely successful performance of it in that nation, I will now lay before you. " Jacoba Roeël, Petri Boxmeer uxor, Leidæ degens, quæ 26 Januarii A. 1782, a doctiss. Brand Obstetricante, & expert. Baate, Chirurgo publico, optato cum successu, per Hysterotomiam vivi infantis masculi læta mater evasit, die 24 Martii ejusdem anni, templum pié adiit.—Infans continuo sanitatis commodis fruitur, *dum mater etiam absque ullo malo* sana valeat." This event is celebrated in the following lines :

" Justa lacessitus dum surgit in arma Batavus
Perfidiæ vindex, dire Britanne, tuæ;
Tramite, quem ferrum, non quem Natura, reclusit,
Ingredior mundum, contueorque diem;
Quin ferrum cum luce simul? non hostis in hostem
Quo furat, ac Marti dextra cruenta litet;
Sed geminas uno vitæ quod vulnere præstet
Incolumes, geminas præcaveatque neces.
Salve operæ felix BRANDI! per cujus amicam
Sævitiam matri parta mihique salus.
Ut neget egressus Natura; negante vel ipsa,
Repperit Ars aliam prodigiosa viam," &c. &c.

J. P. Michel, de Synch. Pub. Com. P. 237.

The operation was also performed at Leyden, in May 1792, when I was there, by the celebrated Professor Sandiforth, in a case where he informed me, that the delivery might have been effected by the crotchet, without much difficulty. I saw him on the day after the operation, and he at that time had great expectations of the recovery of his patient. What was the event, I have yet to learn.

At page 34, you say, " Warned by the fatal termination, it would appear superfluous to describe the manner of performing this operation; but as I have a remark or two to offer that may be useful in other cases, I shall briefly describe it. *I shall be readily excused from saying any thing of the employment of the actual or potential cautery, for this purpose, the stories of their application are so incredible.*" See page 31st of this letter. " The operation then divides itself into two distinct parts, the division of the parietes of the abdomen, and of the substance of the uterus. The external incision has been made longitudinally, obliquely, or transversely. *One of Rousset's operators made a circular incision to shew his superior dexterity.*" See page 22. " The longitudinal and oblique incision has been made on either side of the navel; and the transverse, either above or below that point.

The chief object to be held in view, in the first instance, would seem to be the avoiding of hemorrhage. Accordingly the longitudinal incision has been made parallel to the outer edge of the recti muscles; and the oblique in the direction of the linea semilunaris, inclining to the spine of the ilium, to avoid wounding the epigastric arteries. But this method is liable to objection, on the proposed ground of its safety, the artery sometimes deviating from its usual course; and unless, from extreme deformity, the distended womb should incline very much to either side, it cannot in any respect deserve a preference.

The transverse incision has been preferred by some French practitioners; and it has been performed in this way, we are told, with success. The incision is directed to be made transversely above the navel, through the integument and abdominal muscles, and then through the fundus of the uterus. The epigastric arteries will be thus divided, and although they may be immediately compressed and secured by ligature, some effusion of blood will necessarily take place, and the cavity will also be longer exposed. The most serious objection, however, will be the utter impossibility of any extravasation that shall take place, during or after the operation, being afterwards discharged; so that should the patient escape, by

a miracle, the first consequences of the operation, a second miracle must be wrought, or the patient will perish. The smaller annoyance from the protrusion of the viscera, the alledged reason for preferring the transverse incision, cannot be put in competition with so weighty an objection, as the extravasated fluid will in all probability act as an extraneous body, and induce peritoneal inflammation; which is at all times an extremely dangerous disease, and very commonly fatal.

Obviously the most eligible method is to make the incision in the linea alba, commencing immediately below the navel, and carrying it in a direct line towards the pubes, so as to make an opening six or seven inches in length. In this direction, no blood-vessel of any consequence can be divided; and it is also convenient for making the opening into the uterus. To detail the history of this mode of operating would afford little satisfaction; but it is of a much earlier date than Baudeloque has stated it to be. He mentions Deleurie and Waroquier, as the only surgeons who have performed the operation in the *linea alba* with success. I cannot resist the inclination to insert the following remark, on which the reader will make his own comment. "It is easy to perceive, says M. Deleurie, all the advantages of having the wound in the uterus, as I may say,

before the eyes, during the progress of the cure, and having it answer directly to the external incision; by that means the humours discharged from the uterus have a free exit." Baudeloque's Midwifery, vol. 3. pag. 371. The incision of the womb is of necessity made opposite to the external wound, and of the same dimensions, and a ligature may be applied on such vessels as shall require it, as directed by different writers; but when that shall become necessary, I have no conception of the possibility of a recovery."

And at page 38, you give us the following passage. " The next point is the providing a passage for the transmission of any extravasation that shall take place, whether it be blood or any other fluid; and instead of introducing a tent or canula, as some have recommended, the light application of lint between the lips of the lower angle of the wound, so as in part to hinder the union of the sides, will accomplish it very completely. Should symptoms indicating a collection of fluid arise, it will be easy to break through any slight adhesion that shall have taken place between the parts of the surfaces lying in contact, and yet by adopting this method, every possible chance will be given for escaping the inflammation of the cavity."

After your invectives against the Cesarean operation, I am astonished to find, that you have condescended to give directions respecting the manner of performing it, and more particularly so, as it is an operation, which has not fallen within the sphere of your observation. Had you been silent concerning the mode of operating, I should have given you credit for knowing more concerning it, than I find to be the case. For it will not be difficult to demonstrate, that the method, proposed by you, will always be inconvenient, and in many cases absolutely impracticable, if the operation be limited to such cases of distorted pelvis, as it has hitherto been in Great Britain. Your ideas of the abdominal muscles named *Recti*, and the direction of the *Linea Semilunaris*, and also of the natural course of the *Epigastrick Arteries*, seem to be extremely incorrect.

When you say, "*Obviously the most eligible method is to make the incision in the linea alba, commencing immediately below the navel, and carrying it in a direct line towards the pubes, so as to make an opening six or seven inches in length,*" One could hardly suppose that you were planning an operation to be performed upon the diminutive creatures, who have been the objects of the Ce-

sarean Section in this nation. Have you not, Sir, a more correct knowledge of the space between the Umbilicus and Ossa Pubis of a poor distorted creature, who does not measure more than from three feet and a half, to about four feet and a half in height, than to suppose it practicable to make an incision of seven inches in length between the two points specified? Do you not know, that in many cases the uterus is placed nearly transversely in the cavity of the abdomen, or even with the fundus lower than the cervix, forming what the French writers call *le ventre en besace?* See Levret L' Art des Accouchemens. Planche ii. fig. 8, 9. Do you not know, that in these cases the umbilicus, and the hypogastric region can scarcely be made at all accessible to the knife? How then can this be a convenient part for making the opening into the uterus? Let us see what Dr. Hunter says upon the subject. " In a very short and crooked woman, with a very narrow pelvis, upon whom I saw the Cæsarean section performed, from a concurrence of the above mentioned causes, the fundus uteri was turned not only forwards, but even a little downwards. As she lay upon the table, the *navel and upogastrium* could not be seen; the navel being situated on what might have been called the posterior and inferior part of

the abdominal tumour," &c. &c. See Hunter's Anat. Descr. of the Human Gravid Uterus, p. 9.

Have you forgotten, that the outer margins of the *M. Recti Abdominis* are, throughout their whole length, in contact with the *Lineæ Semilunares?* Do you not know, that an incision made parallel to the outer edge of the above named muscles must necessarily be either in, or parallel to, the *Linea Semilunaris?* And do you not know that an oblique incision, instead of being, as you say, " in the direction of the *Linea Semilunaris*, inclining to the ilium," will, if produced, intersect this line?

Speaking of the transverse incision, as made above the navel, you say, " The Epigastrick arteries will be thus divided, and although they may be immediately compressed and secured by ligature some effusion of blood will necessarily take place, &c." I would here ask you, if you do not recollect, that the branches of the *A. epigastricæ* are become so small above the navel, as very rarely, if ever, to pour out much blood, or to require either compression or a ligature? Do you not know, that they here begin to anastomose with the extreme branches of the A. mammariæ? Or are you apprehensive, that

there may be a *lusus naturæ* in the course of the artery here also ?

You proceed to say, " The most serious objection," (to the transverse incision), " however, will be the utter impossibility of any extravasation that shall take place, during or after the operation, being afterwards discharged; so that should the patient escape, *by a miracle*, the first consequences of the operation, a *second miracle* must be wrought, or the patient will perish."'

Does it require, Sir, a second miracle to place the poor woman upon her wounded side ? For I maintain, that, in this position of her body, the wound is actually situated in the most depending part of the cavity of the abdomen, even if we consider this as extending to the bottom of the pelvis; consequently it is in the situation most favourable to the discharge of extravasated fluid.

Besides, is it not possible, that a coagulum of blood, weighing three or four ounces, may be taken up by the Absorbents, opening upon that cavity, without a miracle being wrought ? And do not you perceive, that many advantages are derivable from making the incision in this direction, and situation ? Do not you see, for example, an advantage, from having the external in-

cision in the direction of the fibres of the *M. Transversus Abdominis?* Do not you perceive, that the Lochia will be much less likely to be effused into the cavity of the abdomen, when there is no wound in the inferior part of the uterus, &c. &c.?

Can you, for one moment, believe, that, if the operation were performed in the lower part of the *Linea alba*, as you propose, the wound of the uterus, after the necessary contraction of that viscus, will correspond with the external incision? May we not rather expect, that any effused fluid will be most likely to fall down into the cavity of the pelvis? And in case of such an event, how can you possibly place this external wound in the most depending part, with the view of favouring the evacuation of this extravasated fluid, but by obliging your patient to lie upon her face, which is a most irksome position? By saying, "as the extravasated fluid will in all probability act as an extraneous body, and induce peritoneal inflammation," you admit, that it is only *in all probability*, that the above miracle can be necessary.

You, with good reason, apprehend great danger from the abdominal cavity being rendered imperfect, "which" you observe, "in itself is a suffi-

cient cause to induce the inflammation of any cavity, according to the opinion of the late Mr. Hunter." Page 39.

I must hereupon inform you, that the best way of avoiding this source of inflammation, is to heal the wound by the first intention, and that you could not have advised a method, worse adapted to this end, than the interposition of lint to prevent the union of its lips. Is not this precisely what is done with the view of exciting inflammation of the *Tunica vaginalis testis?*

As I am only desirous of pointing out, and refuting the most *material* assertions of your book, I shall pass over some of the *less exceptionable* doctrines, contained in the quotations given above; And the next passage, upon which I shall make an observation, is this, "But Doctor Osborn has *proved* by his experience, which has since been confirmed by that of others, that the child may he extracted by the crotchet, whatever the distortion shall be, if *in any part of the cavity* there shall be a space of one inch and a half in diameter, and, I believe, most of the *pelvises, on which the Cæsarean operation has been performed, were above those dimensions.*" There must be a trifling error in this passage. You surely can not mean that the Cesarean operation has been performed

upon the pelvises, but *upon women, whose pelves* were above the dimensions stated.

I will now adduce what Dr. Osborn has *asserted* upon this subject. " I therefore examined a great number of children's heads, who died immediately in, or near the time of birth, and found but the smallest possible variety in the volume of the bones making up the basis of the cranium, when it is turned sideways; for measuring these bones in that state, I found that they never exceeded one inch and a half in width; indeed they seldom measured quite so much, after the frontal and parietal bones were removed. Whenever there is a space from pubis to sacrum, or from the fore to the hind part of the upper aperture of the pelvis, equal to an inch and half, I am convinced it will be always practicable to extract a child by a crotchet, after the head has been some time opened, and the texture of the child's body is softened by putrefaction (as recommended above), and the whole of the parietal and frontal bones are picked away; and that,—with tolerable facility to the operator, and perfect safety to the parent." Osborn's Essays, p. 229, 230. And at p. 446, The Dr. has this passage, " I have *endeavoured to demonstrate* that it" (the head of the child) " may be safely extracted by the crotchet, wherever there is a space equal to *one inch and a*

half from pubis to sacrum, either immediately between the projecting angle of the sacrum and the symphysis pubis, or on either side the projection."

To these opinions of Dr. Osborn, I shall content myself, for the present, with opposing the following extracts from Dr. R. Wallace Johnson's System of Midwifery, and Hamilton's Letters to Osborn. "I declare that I think Dr. Osborn was mistaken in his dimensions of this woman's pelvis. Nay, although I have the happiness of hands as small, and fingers as strong as most men, and am not very unskilful in mechanics, yet, in a space so narrow as he describes, I verily believe, that neither myself or any person of the greatest judgement and expertness, could guide a crotchet, and apply it so well on the child, as to extract it with safety to the mother.

I lately asked a very ingenious practitioner, who did examine this woman before the Doctor began the operation, whether the dimensions of the pelvis were taken as I had described in my book? To which he replied, that they were not to his remembrance: I then requested to know, how he and the other gentlemen, who also examined her, could be certain that the pelvis was so small as Dr. Osborn had described? To which

he very candidly answered, that to him and them it felt very narrow, but to affirm that it was exactly as the Dr. had said, was more than he could do." System of Midw. page 309. Ed. 2. 1786.

" *If the basis of the head can only be reduced by the operation of embryulcia to the width of an inch and an half when turned sideways, I cannot conceive, that when joined to the body of a child, it can be drawn through an aperture of the same width, even in its whole extent, much less on either side of the projecting sacrum, for the neck must add somewhat to the volume of the head.*" Ham. Lett. p. 134.

" The following experiment may be tried, and I shall rest the decision of this argument on its result. Let an artificial pelvis of strong tempered steel, be constructed in such a manner, that, at the brim, the diameter from one ilium to the other may measure somewhat more than four inches and an half, the transverse diameter from pubis to sacrum three quarters of an inch, the aperture on the left side of the sacrum no more than that, and the aperture on the right side about an inch and three quarters at one point only, being much narrower both towards the ilium and sacrum. Let a still-born mature fœtus, of an ordinary size, with the cranium opened, and its contents discharged, be macerated for thirty-six hours in wa-

ter of the temperature of 98° of Fahrenheit's Thermometer. Let the base of the cranium be broken down as much as it can be done in real practice, and then, by means of the crotchet fixed in the foramen magnum, let it be tried whether it be possible without the exertion of so much force as would separate the bones in a living subject, to extract the child through the brim of that artificial pelvis." Ibid, p. 135 to 137.

That these were the dimensions of Elizabeth Sherwood's pelvis, as stated by Dr. Osborn, you must know, for you have transcribed the account of it in pages 47 and 48 of your work. And yet, notwithstanding this fair appeal to experiment was made in the year 1792, Dr. Osborn has not published a reply, that I know of.

But admitting that Dr. Osborn had *proved his assertion*, given in the above quotations, I shall now demonstrate, that you have most grossly misrepresented *him* also. The Doctor every where particularly specifies, that he means the *space from the fore to the hind part of the pelvis*; but you boldly affirm that he "has proved that the child may be extracted by the crotchet, whatever the distortion shall be, if *in any part of the cavity there shall be a space of one inch and a half in diameter.*" No such thought could ever be

supposed to be entertained by Dr. Osborn. Has he not expressly mentioned in the case of Eliz. Sherwood, that the transverse diameter of her pelvis, at the brim, was more than four inches and a half from one Os Ilium to the other? And this, I presume, is one of the most contracted pelves, through which a child has ever been extracted by the crotchet. To what cause are all these gross misrepresentations to be imputed?

Your ideas of distance, and proportion, seem wondrously incorrect, otherwise the employment of a little power of reflection, would have taught you, after making the above declaration, that there never could be a necessity for the compound operation of *Embryulcia* and *Sectio Symphysis Pubis*, which you have proposed. For I will venture to assert, that no woman ever has had, nor ever can have, a pelvis so contracted, that there shall not be, *in some part of the cavity*, a space of more than one inch and a half; a space, which you have stated to be sufficient for the extraction of the child by means of the crotchet alone. At p. 55 and 56, you say, "I have myself had occasion to apply the crotchet in cases, where the pelvis has been very narrow, and have always found, that the patients speedily recovered

from the consequences of the operation." And, at the latter page, you give us the following Note.

" * My connection with the Infirmary, gives me opportunities of seeing a greater variety of difficult cases in Midwifery, than would otherwise fall to my lot. In the year 1790" (the year in which all the present six surgeons of that Institution were elected) " I proposed to the trustees to annex midwifery to the other objects of their charity, there being then no establishment in the town for that purpose. Soon after my proposal was made, the present Lying-in Hospital was instituted, without my knowledge; but the trustees adopted so much of my plan as is contained in the following rule, which is now inscribed on every home-patient recommendation." " *Poor* married women will be attended in labour by the *surgeons*, when the midwife *cannot deliver them*, on application being made at the Infirmary, in the day, and to the Bathman, at the gate of the Infirmary, in the night."

Whether the midwifery-patients, who have been under your care, in consequence of this regulation, have furnished you *one* crotchet case, you best know: but that it cannot have afforded you many, will appear from the following statement,

which, I have reason to believe, is nearly, if not perfectly, correct, and which was given me by one of my friends.

" An ACCOUNT of the NUMBER of POOR WOMEN, who have been attended, in labour, by the Surgeons of the Infirmary, from June 24, 1791, to December 24, 1798.

From June 24 1791 to June 24 1792	9
From June 24 1792 to June 24 1793	12
From June 24 1793 to June 24 1794	9
From June 24 1794 to June 24 1795	5
From June 24 1795 to June 24 1796	3
From June 24 1796 to June 24 1797	0
From June 24 1797 to June 24 1798	1
From June 24 1798 to Dec. 24 1798	0
Total in seven years and a half.	39"

Hence it appears, that if you have had seven patients of this class, in seven years and a half, you have had rather more than your proportional number.

Pray, Sir, amongst your crotchet-casses have you ever met with *one*, in which there was *not more than one inch, and a half in any part of the cavity of the pelvis?* And will you have the

goodness to state the lowest dimensions, through which you have been able to extract a child, by means of the crotchet?

Let us now attend to what you have advanced, at page 60, "Should then a case occur, in which even *the widest part of the pelvis is one inch and a half* in diameter, these cases prove" (viz. the cases of Eliz. Sherwood, Ann Cooper, and Mrs. West), "that the delivery may be accomplished by the crotchet, with perfect safety to the mother, and with no great difficulty to the operator."

I must here beg leave to observe, that the women, mentioned above, were not delivered with perfect safety, although the width of their pelves was more than twice as large, as you have stated.

Dr. Osborn tells us that, in the case of Elizabeth Sherwood, "*Even the first part of the operation, which in general is sufficiently easy, was attended with considerable difficulty, and some danger.*" Page 245. This passage is given in your work, at page 49. And *you* assert at page 66, where you are recommending the compound operation of Embryulcia and Synchondrotomia Pubis, that "as the base of the skull will *probably* be turned sideways, it" (the urethra) "will suffer less in

extraction than in other cases of the crotchet; *in which it must in general be injured from pressure against the pubis.*" I would here ask you, whether so important a part, as the urethra, can be injured, with perfect safety to the patient? And if, according to your own concession, the urethra be, in general, injured from pressure, will not the cervix of the Uterus be also much injured from pressure against the Ossa Pubis? And will the contusion of this part also be attended with no danger to the patient?

We will now examine how far the operation could be regarded as easy, or difficult, in this case. Dr. Osborn, who is a strong and large man, having, as he believed, fixed the crotchet in the great foramen, adds, "Of this I availed myself to the utmost extent, slowly, gradually, but steadily, increasing my force, till it arrived to that degree of violence, which nothing could justify but the extreme necessity of the case, and the absolute inability, in repeated trials, of succeeding by gentler means. But even this force was to no purpose; for I could not perceive that I had made any impression on that solid bone, or that it had been in the least advanced by all my exertions." P. 253 and 254.

Having afterwards, as he tells us, by changing the

position of the base of the cranium, succeeded in bringing it down and out of the os externum, he says, " After waiting a few minutes, a napkin was put round the neck of the child, and given to an assistant. I then introduced the crotchet, and (first opening the thorax) fixed it firmly in the sternum. *By our united force, strongly exerted for about a quarter of an hour, first one shoulder was brought down, and then the other; and lastly, after opening the abdomen, the whole body, (with the sternum and spine pressed close together) were extracted in the most putrid and almost dissolved state.*" P. 255, and 256. This is, according to your expression, *accomplishing the delivery with no great difficulty to the operator!*

I must moreover inform you, that I do not admit the *possibility*, much less the *safety*, of the extraction of a full grown fœtus through a pelvis, *the widest part of which is not more than one inch and a half in diameter.*

One remark I wish to make, in this place, upon a very singular faculty, which you seem to possess; It is, *the quality of believing, or disbelieving, whatever you please.* With the highest incredulity you have manifested the most extreme facility of belief. You have admitted, at page 29, that the Cesarean operation has been successful on the

continent, in one or two instances; but you will not believe, that it has succeeded more frequently. Now, if you will be so good as to point out the one or two cases, to which you allude, I will undertake to adduce a great many more, equally as well authenticated. But these, by virtue of your voluntary incredulity, you have rejected.

Yet you do believe, that the base of a fœtal cranium, which measures more than four inches in length, about two in breadth, and one and a half, at least, when turned sideways (in which case also the neck of the child will form a considerable impediment), can by the crotchet be brought through a pelvis, the *widest part of which is only an inch and a half*. To any one, who is capable of reflection, I trust, the bare statement of this matter, is sufficient to prove the impossibility of a delivery in this way. Here then is an example of your unbounded credulity.

The next quotation, which I shall take the trouble of examining, is from p. 61 and 62. " In that deformity of the pelvis, in which it has been held indispensibly necessary to perform the Cæsarean operation, to accomplish the delivery, but which the above cases prove to be otherwise ; it has been deemed requisite to obtain absolute certainty of the child being alive ; and

also, in such a state of vigour, as to give every possible assurance of its surviving this so fatal operation to the mother.

Many signs are laid down by which we are instructed to determine on the child's being alive; but they are in general so equivocal, that it is only when taken collectively, that any stress can be laid upon them. The declaration of the mother, by which we are guided, for the most part, is not at all to be relied on in this instance.

Women, not pregnant, have asserted that they felt the motion of the child; and every practitioner must have met with instances of the mother confidently declaring the child to be alive; and yet, soon after, her mistake has been manifest, by the birth of a fœtus that had been dead some time. Agitation of mind, added to long bodily suffering, will render a woman unable to give a distinct account of her feelings; and, if in any way led to hope for relief, from answering in the affirmative, the imagination will often supply the want of real sensation. In a matter so important, the practitioner is called upon to exercise his skill and circumspection; and when doubt shall arise, prudence, propriety, and humanity, demand the forbearance of means, which will prove inevitably fatal to the mother. But if, on the

testimony of the mother, the Cæsarean section should be performed, and a putrid child should be extracted, (as the facts prove that she will certainly die of the operation,) it would be difficult to determine whether the operator deserved most reprehension, for his inexcusable ignorance, or cruel inattention."

I would first inquire of you, when, or where you have learnt that " it has been deemed requisite to *obtain absolute certainty of the child being alive, and also in such a state of vigour, as to give every possible assurance of its surviving this so fatal operation to the mother*," in those cases where it is held necessary to perform the Cesarean operation? Or whether this is not purely a creature of your own imagination? At any rate, I must beg leave to refuse my assent, *in toto*, to this position.

With regard to the signs of the child's being alive, you say, " they are in general so equivocal, that it is only when taken collectively, that any stress can be laid upon them." If it be only *when taken collectively*, that *any stress* can be laid upon them, you must be understood to intimate, that *no stress* can be laid upon them, *when taken singly*. But I contend that, if *no stress* can be laid

upon them, *when taken singly*, *no stress* can be laid upon them, *when taken collectively*. You have therefore made use of an expression, from which we are at liberty to infer, that *no stress* can be laid upon the signs of the child's being alive, when taken collectively.

Again, I contend in *opposition to your assertion*, that there are several signs, by which we are enabled to determine positively concerning the child's life, e. g. the pulsation of the heart, the pulsation of the arteries of the Funis umbilicalis, or any other arteries that are within our reach, &c. &c. Again, the declaration of the mother, contrary to your assertion, is in my humble opinion *very much* to be relied on. Since I have been engaged in writing these comments upon your *Reflections*, I have been consulted by two females, one of whom has been delivered of four dead children in succession, and the other of six; and they inform me, that they can distinguish very accurately, not only that the child is dead, but, in general, at what time it dies, and consequently how long they carry these respective infants after their death. The former patient I attended in labour; she informed me, when I first entered the room, that her child had been dead more than a week, and, from the state in which it was born, I have no doubt of the truth of her observation.

Will you, because one or two women have been deceived, assert that, "*the declaration of the mother is not at all to be relied on in this instance?*" It would be just as reasonable for me to assert, because I have found *you* guilty of frequent egregious mirepresentations, that the declarations of other authors are not at all to be relied on.

I have next to make some remarks on one of the most shameful observations, that ever proceeded from the pen, or mouth, of any medical practitioner. You say, "if, on the testimony of the mother, the Cæsarean section should be performed, and a putrid child should be extracted, (as the facts prove that she will certainly die of the operation,) *it would be difficult to determine whether the operator deserved most reprehension, for his inexcusable ignorance, or cruel inattention.*"

There can not be the least doubt, that this accusation is particularly levelled at me, and the gentlemen, who were concerned with me in performing the Cesarean operation upon the unfortunate Ann Lee; whose case is particularly detailed, towards the end of this letter. I acknowledge, without the least hesitation, that, having observed no positive signs of the death of the infant in this case, I entertained hopes, founded on the repeated and positive testimony of the

mother, that the infant was alive; although I was not without fear, that she might be deceived, on account of the long duration of her labour, and the repeated convulsive paroxysms. with which she had been afflicted. But had the child's death been unequivocally ascertained, I should, notwithstanding, have recommended the operation, because I was fully convinced, that she could not be delivered by the crotchet, and because I thought it much more humane, (and consequently my duty), to give the unfortunate sufferer that chance of life, which the Cesarean operation afforded, even in her deplorable condition, than to abandon her to the painful death, which would have been her lot, had we left her undelivered.

The same charge applies to men of the first eminence in their professions, as may be seen in the synoptical tables given above, as well as myself; and I have no doubt, but they feel much more satisfaction, under their want of success, from performing the operation; than they would, under the same want of success, from neglecting the performance of it; because they must feel the gratification, arising from a sense of the discharge of their duty.

From your severity, and want of candour, in thus condemning the practice of your medical

brethren, it might be supposed that your steps have been infallibly right. Is this the case, Sir? Are you certain that your diagnostick powers are superior to those of the Accoucheurs, who were consulted in the case of Ann Lee? Can you, by touching a small portion of the tumified scalp of a *fœtus in utero*, be so certain of its death, as to contradict flatly the testimony of the mother, founded on her experience of its motions? I cannot believe, that you do possess the *tactus eruditus* in this exquisite degree. Is it candid, when you *imagine*, that your brethren have been acting wrong, to stand up as *Censor General*, and make such dreadful accusations, as are contained in your book? Consider, with attention, the arguments in defence of an operation, which the cruel fate of humanity has made it necessary for us occasionally to resort to. And, if you be open to conviction, you must allow, after reading the case, that our practice was the best, that could possibly have been adopted. Does not your own practice furnish *one case* of pregnancy, or parturition, in which this shocking accusation is much more applicable to yourself than to me, and the gentlemen, who favoured me with their advice and assistance? Do you believe, that there is one medical gentleman in this large town, who would have come forward, and have accused you either of inexcusable ignorance, or cruel inattention, if

you had been concerned in the performance of the Cesarean operation in this deplorable case? I can not conceive, that any, with whom I am acquainted, are capable of acting so dishonourably.

At p. 63, speaking of the section of the symphysis pubis, you add, "Although abandoned with a view to the preservation of the mother and child, it was suggested by Dr. Hunter, that it might be a considerable improvement in that distortion of the pelvis, in which the head cannot otherwise be brought within reach of the crotchet." At p. 65. you say, "When a case shall arise in which the child cannot be delivered by the crotchet, from the brim of the pelvis being no more than *one inch* in diameter; I propose to combine the two operations, and to divide the symphysis pubis to make way for the crotchet." At page 66. you say, "The objections urged against this mode of delivery, when the head is of the full size, will not apply to its reduced bulk; and it should be remembered, that the symphysis is formed of cartilage, and ligament; so that whatever pressure shall be made against the divided edges, will not be made against the sharp angles of bone. That much injury may be done anteriorly will not be denied; but, does the continued pressure of the child's head

never produce mischief in other cases? By the introduction of a female sound for a guide, a cautious and steady operator will avoid wounding the urethra; and as the base of the skull will probably be turned sideways, it will suffer less in extraction than in other cases of the crotchet, in which it must in general be injured from pressure against the pubis. If the separation, however, be carried beyond a certain length, laceration will probably ensue; and, should this accident occur, I see no reason to apprehend more danger from it than follows the extraction of a large stone from the bladder through a small opening, which will induce a lacerated wound, but which we know will not uncommonly heal. The sacro-iliac ligaments would certainly not be injured by choice, but the consequences, I believe, are not generally fatal."

And at page 68, you say, "Upon the whole then in that supposed case of distortion (which I hope will never happen) in which the mother must be doomed to death, from the impossibility of delivering the child by the crotchet, the compound operation I have recommended will furnish a resource, approved by reason and sanctioned by experience; inasmuch as the section of the symphysis pubis has been made, and the crotchet has been used, though separately, yet with safety. Such

a case will be attended, unquestionably, with additional hazard; but it offers the only chance to the mother, to the preservation of whose life our chief care should be directed: and, I hope that in future all trace of the Cæsarean operation will be banished from professional books; for it can never be justifiable during the parent's life, and stands recorded only to disgrace the art."

By adopting the project of Dr. Hunter, in such extreme cases of distortion, you have, I believe, manifested greater intrepidity than any other practitioner, in this kingdom at least, for I have never heard of one, who had the *hardiesse* ever to think of putting it in execution. Instead of this, however, I should, from your ingenuity, have expected the suggestion of some new operation. What do you think of an *Exsectio Symphysis Pubis?* Would not a complete, and dextrous, removal of the anterior portion of the pelvis be preferable in the extreme case of distortion, specified by you, to the mere division of the symphysis? Or, if you should have an objection to the removal of so large a portion of bone, might not it be better merely to saw through the *Ossa pubis* near the *Acetabula*, and also at their junction with the *Rami* of the *Ossa Ischii*, and after extracting the child, to replace them, and take the chance of their uniting again with the

parts, from which they had been severed? Perhaps, by either of these operations, a space might be obtained sufficient for transmitting a child through a pelvis, which is considered as rendering the Cesarean operation requisite; but scarcely for extracting a child through a pelvis, which has only *one inch and a half in any part of it's cavity*, although you have stated this as a safely practicable crotchet-case. See above, at page 116.

I will now present to you a picture, which is not overcharged, of the consequences you may expect to succeed your Compound Operation, even when employed in cases, where the distortion is in a much less degree, than that in which you propose to employ it. It is drawn by the excellent Baudelocque, who has paid the greatest attention to the event of the recorded cases of Synchondrotomia Pubis. He says, at § 2091. " Si cette opération ne met que très rarement à couvert la vie de l' enfant, même lorsque le bassin n' est pas des plus difformes, elle n' est pas alors toujours exempte d' accidens graves pour la mère. La mort de l' un & de l' autre est certaine, quand cette mauvaise conformation est extrême. Les suites de l' écartement spontané des os pubis, des os des îles & du sacrum, dans quelques accouchemens naturels ou laborieux, annonçoient

depuis long-temps celles qu' on devoit craindre de cette nouvelle opération; l' exemple de la femme *Vespres*, ceux de la cinquième opérée par M. *le Roy*, de la quatrième par M. *de Cambon*; de celle d' Arras, de Dusseldorp, de Spire, de Lyon, de Gênes; celle de M. *Rielley*, de M. *Mathis*, &c. ont prouvé que ce n' étoit pas en vain qu' on redoutoit ces mêmes accidens. Le delabrement des parties extérieures & du col de la matrice; l' inflammation & la gangrène de ce viscère; des dépôts de matières purulentes, sanieuses et putrides dans le tissu cellulaire du bassin; la hernie de la vessie entre les os pubis; des échimoses le long des muscles psoas; la lésion du canal de l' urétre; l' incontinence d' urine, & des gangrènes plus ou moins profondes, &c. forment le tableau des accidens dont cette nouvelle opération est susceptible. En accordant que ceux de l' opération, césarienne soient aussi formidables pour la mère, au moins offre-t-elle une ressource assurée & exempte de tout danger pour l' enfant. La-quelle des deux opérations sera donc préférable?"

Note. La section du pubis a eu des suites fâcheuses non-seulement dans ce cas; mais en d' autres où l' on avoit porté l' écartement des os pubis au-delà d' un pouce & demi, quoique le bassin ne fût que médiocrement resserré. Sur trente-

trois femmes dont nous avons parlé, douze sont mortes évidemment des suites de l' opération césarienne :* nous n' y comprenons pas celle qui fait le sujet de l' observation de M. *Bonnard*, Chirurgien à Hesdin ; puisque la section du pubis n'a pas été faite completement. Parmi les vingt autres, le plus grand nombre étoient accouchées naturellement auparavant, ou l' ont fait depuis très-heureusement ; & plusieurs sont restées infirmes. § 2092. Quand on pourroit, sans inconvéniens pour la femme, obtenir deux pouces & demi d' écartement entre les os pubis après la section de leur symphyse, l' opération césarienne sera toujours la seule & unique ressource que puisse offrir la chirurgie, dans le cas de mauvaise conformation extrême du bassin ; la section du pubis ne pourroit entrer en parallèle avec elle, qu' autant que le petit diamètre du détroit supérieur auroit au moins deux pouces & demi d' étendue. Si nous avons suspendu notre jugement, lors de notre première édition, sur la préférence qu' on devoit à ces méthodes, dans le dernier de ces cas, en attendant des connoissances plus positives sur l' innocuité ou le danger d' un écartement aussi considérable ; si nous exigions que des hommes, qui n' avoient aucun intérêt à faire valoir cette nouvelle méthode au détriment

* The introduction of the word césarienne appears to be a typographical error.

de la première ; que ses adversaires, en un mot, eussent vu un écartement de deux pouces & demi, sans rupture des symphyses sacro-iliaques, & sans inconvéniens, pour nous faire adopter cette nouvelle opération ; plus instruits aujourd' hui sur tous ces points, nous ne craignons pas de la rejetter, et d' assurer qu' on n' a jamais écarté les os pubis de deux pouces & demi sans qu' il en eût coûté la vie à la femme. Elle n' a eu de succès que lorsqu' on l' a faite sur des bassins au moins de trois pouces moins un quart de petit diamètre, & qu' autant qu' on a borné l' écartement des os de beaucoup au-dessous du terme où l' on s' est persuadé l' avoir porté ; dans ces cas, en un mot où elle étoit absolument inutile ; le bassin étant plus grand encore, puisque nous l' avons trouvé au-delà de trois pouces sur quelques-unes des femmes. La section du pubis ne peut soutenir aucun parallèle aujourd' hui avec l' opération césarienne ; on pourroit au plus, en quelques circonstances seulement, la substituer au forceps : ne pouvant, sans de grands inconvéniens, donner au bassin, dans la direction du pubis au sacrum supérieurement, que deux lignes d' accroissement ; comme cet instrument peut, sans danger, réduire de deux lignes le diamètre de la tête du fœtus. Mais quel sera le Praticien qui préférera, à une méthode couronnée par des milliers de succès, une opération nouvelle qui ne paroît encore

qu entourée d' ecueils ? Si l' on accordoit quelques avantages à celle-ci, ils ne seroient jamais plus évidens que dans l' enclavement de l' espèce dont parle *Roederer*, où l' on ne peut, dit-il, introduire aucun instrument entre la tête & le bassin, dans quelque endroit qu' on tente de le faire : elle mériteroit alors la préférence sur l' ouverture du crâne, sur l' usage des crochets, & la section césarienne proposée par le même Auteur : elle seroit préférable encore dans le cas où le détroit inférieur est resserré transversalement, s' il ne falloit que peu d' écartement pour donner à ce diamètre l' étendue qui lui manque."

" § 2091. Though this operation very seldom secures the child's life, even when the *pelvis* is not excessively deformed, it is not then always exempt from the severest consequences to the mother. *The death of both is certain when that deformity is extreme.* The consequences of a spontaneous separation of the *ossa pubis*, and of the *ossa ilia* and *sacrum*, in some natural or laborious labours, long since announced those which might be expected from this new operation; the example of *Vespres*, those of the fifth woman on whom *M. le Roy* performed it, the fourth by *M. Cambon;* that at *Arras*, at *Dusseldorp*, at *Spire*, at *Lyon*, at *Gênes*; that by *M. Riollay*, by M.

Matthiis, &c. have proved that it was not without cause that those accidents were dfeaded. A *devastation in the external parts and the neck of the uterus; an inflammation and gangrene of that viscus; collections of purulent, sanious and putrid matter in the cellular tissue of the pelvis; a hernia of the bladder between the ossa pubis; echimoses along the psoæ muscles; injury to the canal of the urethra; incontinence of urine, and gangrenes more or less profound, &c. form the group of accidents of which this new operation is susceptible.* Granting that those of the Cesarean operation are as formidable for the mother, at least it presents a certain resource, exempt from every danger, for the child. Which of the two operations therefore ought to be preferred?

Note. The section of the *pubes* has had disagreeable consequences, not only in this case, but in others, where the separation of the *ossa pubis* has been carried beyond an inch and a half, though the pelvis was only moderately contracted. Of the thirty-three women I have mentioned, twelve evidently died of tne consequences of the operation: I do not reckon her who is the subject of the operation of *M. Bonnard*, surgeon, at *Hesdin;* since the section of the pubes was not completely made. Among the other

twenty, the greater number had been delivered naturally before, or have been safely delivered since; and several have remained infirm.

2092. Even if we could, without inconveniences to the woman, obtain a separation of two inches and an half between the *ossa pubis* after the section of their *symphysis*, *the Cesarean operation would still be the sole resource in cases of extreme deformity of the pelvis; the section of the pubes cannot enter into comparison with it, except when the small diameter of the superior strait shall have, at least, an extent of two inches and an half.* Though I suspended my judgement, at the time I published my first edition, concerning the preference to be given to one of these two methods, in the latter case, till I could procure more positive information of the innocence or danger of so considerable a separation; though I required that men who had no interest in vaunting this new method, to the detriment of the former; in one word, that its adversaries should have seen a separation of two inches and an half, without a rupture of the *sacro-iliac symphyses*, and without inconveniences, to make me adopt this new operation; at present, better informed on all these points, *I am not afraid to reject it, and to affirm, that no one has ever separated the* OSSA PUBIS *two inches and an half, without destroying the life of the woman.*

It has had no success but when it has been performed on PELVES *at least two inches three quarters in the small diameter*, and when the separation has been limited to much less than the point to which they fancied it was carried; in those cases, in fact, where it was absolutely useless: the *pelvis* being larger still, for I have found it to be more than three inches in some of the women. *The section of the pubes cannot at present maintain any comparison with the Cesarean operation;* at most, it might be substituted for the forceps, in some particular cases only: for it cannot, *without great inconveniences*, give the *pelvis* an increase of more than two lines from the *pubes* to the *sacrum* superiorly; and that instrument may, without danger, reduce the diameter of the child's head as much. But what practitioner would prefer a new operation, which seems to be surrounded by rocks on every side, to one that has been crowned with a thousand successes? If we allow the former any advantages, they would never be more evident than in that species of locked head mentioned by Roederer, where we cannot, says he, introduce any instrument between the head and the pelvis, at whatever part we attempt it; in that case it would merit a preference, over opening the *cranium*, the use of the crotchets, and the Cesarean section proposed by the same author: it would be preferable also, in cases where the inferior *strait* is

contracted transversely, provided that a small separation were sufficient to give that diameter the necessary extent." Heath's Trans. Vol. III. P. 346.—350.

Where the deformity of the Pelvis has been occasioned by Rickets, Exostosis, or Fracture of some of the bones, and is in such a degree as to require, that the Ossa Pubis be separated from each other to the distance of two inches and a half, or even less, in order to allow of the transmission of the fœtus through its cavity; the recorded cases of the Sigaultian operation teach us, that the Ossa Innominata have always been forced from the Os Sacrum, and that the death of the parent has been the consequence.

That the same dreadful circumstance is to be feared also in those cases, where the distortion of the pelvis is occasioned by Malacosteon, is demonstrated by the experiment, which was made by Dr. Hunter, on the pelvis of Elizabeth Hutchinson; for in separating the Ossa Pubis to about the distance of two inches and a half, both the Sacro-Iliac Symphyses were torn asunder, and the largest circle that could then be described, in the interval of the bones of the Pelvis, was only $2\frac{1}{4}$ inches in diameter. See Vaughan's Cases of

Hydroph. Pl. ii. Fig. 1. See also Plate 7th of this Letter, in which an Outline of the superior aperture of that pelvis is given.

From one case of Synchondrotomia Pubis, namely, that performed in England, by Mr. Welchman, of Kington, in Warwickshire, it appears, however, that in a very deformed pelvis sufficient space has been gained for accomplishing the delivery, without separating the Ossa Innominata from the Os Sacrum (at least the separation is not noticed), owing to the bones being very soft and yielding. But as the patient's knees were carefully kept from being moved to a greater distance, after the section, it is to be presumed, that the Ossa Pubis were not nearly separated to the extent above-mentioned. Of this very interesting case, I shall subjoin an abstract, and for the detailed account must refer you to the London Med. Journal for the year 1790.

Mary Ordway, in her second pregnancy, about the year 1774, received a hurt in her loins from a fall, which occasioned great pain, and was relieved by losing some blood. She had a natural easy labour; but became lame immediately after her lying-in, and was troubled with rheumatic pains. Two years after, Mr. Welchman delivered her of another child, after three

days severe labour. On the 22d of September, 1782, he was called to her again. She was now in her thirty-ninth year, and her last child was six years old. From having been a stout woman of about five feet six inches high, she was reduced to less than four feet in height; her knees and chin almost meeting, and the muscles being so contracted, that her knees could be separated but very little without occasioning great pain. For the last two years she had been mostly confined to her elbow-chair, or her bed. Upon examining her *per vaginam*, he found the nates of the child presenting, and the pelvis very much distorted. She was feverish, vomited frequently, and got no sleep.

Sept. 3. A slight flooding came on, which was suppressed by the admission of cool air into her chamber, and the exhibition of Tinct. Ros. The pains became strong, but the child did not advance. Mr. Welchman, and his son, frequently visited her during this day and night, and were both of opinion, that she had not the least chance of living without an operation.

Sept. 4. The section of the pubes was proposed, and consented to, Mr. Welchman being more inclined to perform it, as the mother constantly affirmed she felt the child move. No

urine having been passed for a considerable time, an attempt was made to pass the catheter, but without success, owing to the belly's being very pendulous, and the bladder's being much turned over the pubes. He found great difficulty in making the upper part of the incision, without wounding the bladder, from the above-mentioned circumstance. Whilst he was dividing the Symphysis, by cutting carefully from within outwards, he desired the assistants, who held the patient's legs, to be careful not to pull her knees asunder. He was astonished to find the *nates* of the child brought down to the *os externum* the first pain after the division was made; and that the body and head were extracted with ease. The child was large and quite putrid. The wound being dressed, and a broad bandage applied round the hips, she was put to bed.

Sept. 5. The patient passed a comfortable night, by taking an opiate. And Mr. Welchman had some hopes of her recovery, though her pulse continued much too quick. She complained of a pain in her left side, which she had felt for some days before her labour commenced, and upon examination the uterus was found much too large, and painful when pressed on the left side. Proper remedies were administered; And the next day,

Sept. 6. He found her much better. She was imprudent enough to sit up to tea in the course of this day, and exposed herself to a current of air.

Sept. 7. She was evidently worse; had a troublesome cough, and the pain in her belly was much encreased.

Sept. 8. This morning she had a violent rigor, succeeded by a hot fit, the pain in her belly was much encreased, and her pulse was at 130, but extremely weak.

Sept. 9. The abdomen was much swelled, and she had cold sweats. And on

Sept. 10. She expired early in the morning.

Mr. Welchman is of opinion from an impartial review of the symptoms, that there is not the least reason to suppose her death was a consequence of the operation. He could not obtain permission to open the body till the 13th; at which time, although it was become very putrid, he could discover very evident signs of inflammation on the left side of the *Fundus Uteri*.

The pelvis was removed, and being cleared from the soft parts " measured from side to side

$4\frac{1}{2}$ inches, from the pubis to the sacrum $2\frac{1}{4}$ inches, just at the symphysis, but jutting in on each side to about an inch; and the space betwixt the tuberosities of the ischia was but $1\frac{1}{2}$ inch."

The bones of the Pelvis were so very soft, that into most parts of them a knife could be passed with the greatest ease.

Notwithstanding the great disproportion betwixt the capacity of this pelvis and the bulk of the child's head, "the woman neither complained of pain in the divided parts, nor in her back, from any distension of the posterior ligaments, but was even able to sit at the tea table the second day after the operation." Mr. Welchman assigns as the reason, why the operation was not proposed sooner, that both himself, and his son, perceiving a considerable motion in the bones of the pelvis during every strong pain, he was willing to hope, if the child had been small, it might have been extracted without the operation.

In this instance there can be little doubt, that the softened bones of the pelvis yielded to the impulse of the child's body, and thereby obviated the necessity of a distant separation of the Ossa Pubis.

When Dr. Hunter wrote his Reflections relative to the Operation of Cutting the symphysis of the Ossa Pubis, the experiments he had made, enabled him to speak decisively concerning the laceration of the ligaments, connecting the Os Sacrum with the Ossa Innominata; but the danger, arising from this dreadful accident, had not then been ascertained by experience, as will appear evident from the following extract. "I have had occasion to perform this operation so often upon the dead body, that I do not apprehend I can be much mistaken upon this subject."

1st. It is extremely difficult to execute it with a *thick knife*, however sharp in the edge, the ligamentous and gristly substance between the bones is so incompressible, that it will hardly make room for the thicker part of the knife to follow its edge; but a *thin* knife goes through it with great ease.

2. Whoever has had a little practice, will find that it may be executed without any danger of wounding the *Bladder* or *Urethra;* because in cutting cautiously with a thin knife, from above, downwards and inwards, the instant that the whole is cut through, there is both a particular sound, which informs us that the business is

done, and the two bones fly asunder to a sensible distance.

3. When the *Symphysis* is completely divided, the *Ossa Pubis* separate so little a way, that some force is necessary to produce an interval of half an inch; and upon encreasing the force, till the space of interval comes to two inches and a half, there is a continued crash, from the tearing of the ligamentous fibres at the posterior joints, viz. at the sides of the *Sacrum*. This, tho' requiring great force, is easily effected, by bringing the thighs to right angles with the trunk of the body, and pressing the knees gradually outwards and backwards. In that way, a small force has a great effect, because it has the advantage of a long lever, and is assisted by almost the whole weight of the lower extremities.

4. When such a violent separation of the *Ossa Pubis* has been produced, the *Sacrum* and *Ossa Innominata* remain in contact, only at their posterior parts; the ligaments that connect them at the fore part being all, more or less, torn asunder.

5. The mischief that may ensue upon cutting one joint of the *Pelvis*, and tearing the other two asunder, can be ascertained by experience only. It is proposed, that the incision at the

Pubes shall not penetrate into the cavity of the *Abdomen*. If, by accident, that should happen; the operation would of course be very dangerous. Lacerations of tendons, ligaments, and fleshy parts, when not complicated with an external wound, generally heal up in a kindly manner. as we see in cases of the ruptured *Tendo Achillis*, dislocations, and fractures.

But, on the other hand, at the time of parturition, the body is remarkably disposed to an inflammatory fever, which is always very dangerous when it rises to any height; and therefore, whatever exposes the body to considerable inflammation at that time, we may presume, must be attended with some danger. And it must likewise be remembered, that women who are exceedingly crooked, are commonly so weak, that they easily sink under any great disease." Vaughan's Cases, &c. p. 83.—86.

Dr. Hunter does not any where assert in positive terms, that the Sigaultian operation is preferable to, or that it will supersede the necessity of, the Cesarean section. He tells us, at page 96, " that the section of the *Symphysis* may *possibly* be found to be a much better resource than the Cæsarean section, in a very few rare cases."

And afterwards says, " But supposing a case, where no success can be expected from the crotchet, either on account of the extraordinary narrowness of the *pelvis*, or partly from that circumstance, and partly from a great projection of the *lumbar vertebra* over the cavity of the *pelvis*, hardly allowing any part of the child to come within the safe reach of the crotchet; in such a case, instead of the Cæsarean section which is so dreadful, because so generally fatal to the mother, this new operation, may be found to give the mother a good chance for life, and tolerable health, *if it will make room sufficient for bringing the child within the sphere of the crotchet.*"

Will you then, Sir, after a careful perusal of the above paragraphs, and of the numerous cases of Synchondrotomia Pubis, given by Baudelocque, persist in proposing to combine the two operations, and to divide the symphysis pubis to make way for the crotchet, " *when a case shall arise in which the child cannot be delivered by the crotchet, from the brim of the pelvis being no more than one inch in diameter?*" Page 65.

Will you still feel yourself justified in asserting, that the compound operation, you have recommended, " will furnish a resource, approved by reason and sanctioned by experience; inas-

much as the section of the symphysis pubis has been made, and the crotchet has been used, though separately, yet with safety ?"

It would be just as legitimate reasoning to say, that a child can raise a weight, equal to twenty-four pounds, because he has, *though separately*, raised two twelve-pound weights.

Does it follow, because the Sectio Symphysis Pubis has been made, and a child extracted, without materially endangering the patient, where the conjugate diameter was about three inches, that the same operation may be safely performed, and a child extracted, where the space from pubes to sacrum measures only one inch ? By no means. In the former case, the bones of the pubes are but little separated, and the soft parts even are not always lacerated. But in the latter case, in order to enable us to extract the child, the bones of the pubes must be separated to a very great distance, the soft parts must be dreadfully lacerated, and even the bones, composing the posterior part of the pelvis, must be forcibly torn, or broken asunder at the sacro-iliac synchondroses, the dreadful consequences of which are enumerated above.

When treating of the difference in the event of

Cesarean births in this kingdom, and on the continent, you have, as has been already noticed, said at p. 3. " However inexplicable the subject may be, the *intelligent practitioner* will be governed by the fact, and will not hazard the life of his patient on theoretical grounds."

I have had occasion to mention *more than a hundred cases*, in the course of this letter, and can adduce many more, where the Cesarean operation has preserved the life of the parent. Therefore, I think I am governed by the fact, and do not hazard the life of my patient on theoretical grounds, when I perform it. And I call upon you to produce *one* instance, in which the operation of Sectio symphysis pubis has been employed, without destroying both the parent and child, in such cases of extreme deformity as you propose to employ it.

Lest you, or any of your readers, should be induced to make trial of this dreadful operation, I will relate, in this place, two cases from Baudelocque.

" § 2079. Celle qui fait le sujet de l' observation de M. *Guérard* étoit bien plus contrefaite, puisqu' on ne trouva son bassin, à l'ouverture du cadavre, que de deux pouces six lignes. Ne

pouvant s' accorder sur la nécessité de l' opération, et l' un des consultans se persuadant qu' on pouvoit extraire l' enfant sans ce secours extraordinaire, on fut chercher un des pieds, qui se présentoit dans le voisinage du col de la matrice, & qu' on ne put amener que difficilement dans le vagin. On fit beaucoup d' efforts inutiles, soit pour faire descendre ce pied, soit pour aller prendre le second, & ce n' est qu' à la suite de ces efforts qu' on pratiqua la section du pubis. Quoiqu' elle eût donné un pouce & demi ou environ d' écartement, l' extraction de l' enfant n' en devint pas plus aisée ; on mit à contribution toutes les ressources de l' art, & toutes furent infructueuses. On arracha d' abord la jambe gauche, & on repoussa le tronçon de la cuisse dans la matrice, pour se frayer une route vers la seconde extrémité qu' on ne put dégager, quoique M. *Guérard* & deux consultans y travaillassent tour-à-tour. La tête paroissant vouloir se rapprocher, on attendit, espérant qu' elle s' engageroit, et trompé dans cette nouvelle attente, on ouvrit le crâne, on en évacua le cerveau, & on appliqua successivement le forceps & le crochet. On ne put en détacher que quelques pièces, au moyen d' une sorte de tenaille, & le reste parut inébranlable : la nature, après cinq heures de repos, l' expulsa cependant. Cette opération commencée à une heure après-midi, ne fut terminée que sur

les neuf heures du soir, & la femme y survécut onze jours.

§ 2080. La conduite de M. *Bonnard* paroîtra bien plus sage : n' ayant pu couper complétement la symphyse du pubis qui lui parut ossifiée, & imaginant bien que ce seroit en vain qu' il le feroit par rapport à l' état des symphyses sacro-iliaques, qui devroient être, dit-il, également endurcies, il aima mieux recourir à l' opération césarienne, qu' il assure avoir faite en deux minutes. Il conserva l' enfant qui étoit très-gros ; mais la femme mourut quelques jours après. Si l' on ne peut attribuer sa mort à la section du pubis, qui n' a été que commencée, il n' est pas moins certain que la conservation de l' enfant à été le fruit de l' opération césarienne : le bassin n' ayant été évaluée qu' a deux pouces de diamètre, & l' histoire de la section du pubis n' offrant encore aucun exemple de succés en pareils cas."

" 2079. The woman who was the subject of M. *Guerard's* observation was much more deformed, since on opening her body, the pelvis was found to be only two inches six lines. The accoucheurs not being able to agree concerning the necessity of the operation, and one of them thinking the child might be extracted without that extraordinary aid, they sought for one of the feet, which

presented in the neighbourhood of the neck of the *uterus*, and which could not without difficulty be brought into the vagina. Many fruitless efforts were made, both to bring along that foot, and to search for the other: and it was not till after those efforts that the section of the pubes was performed. Although it produced a separation of an inch and an half, or thereabouts, the extraction of the child was not at all facilitated; every thing that art could suggest was tried, but all in vain. They first pulled off the left leg, and pushed back the dismembered thigh into the uterus, in order to clear the way to the other extremity, which they could not bring down, though M. *Guerard* and two other accoucheurs laboured at it one after the other. The head seeming inclined to come, they waited in the hope that it would engage; but being deceived in that expectation, they opened the *cranium*, evacuated the brain from it, and successively applied both the forceps and crotchet. They could only get away some pieces of it with a sort of nippers, and the rest appeared immoveable: Nature, however, expelled it, after five hours rest. This operation, begun at one o'clock in the afternoon, was not finished till about nine in the evening, and the woman survived it eleven days.

2080. The conduct of M. *Bonnard*, will appear much more prudent: not having been able to cut through the *symphysis* of the *pubes* which appeared to him to be ossified, and thinking it would be in vain to do it, on account of the state of the *sacro-iliac symphyses*, which must, says he, have been equally hardened, he determined to have recourse to the Cesarean operation, which he affirms, he performed in two minutes. He preserved the child, which was very large, but the woman died in a few days. Though we cannot attribute her death to the section of the *pubes* which was but begun, it is not less certain that the preservation of the child was owing to the Cesarean operation: the diameter of the *pelvis* having been estimated at only two inches, and the section of the *pubes* hitherto presenting no example of success in such a case." Heath's Transl. Vol. III. P. 331—333.

In these cases we find two circumstances mentioned, of which you have not taken the least notice, namely, the presentation of another part of the child, instead of the head; and the ossification of the Symphysis Pubis, and the Sacro-iliac Synchondroses? Would not either of these occurrences present a very material obstacle to your compound operation? They are not

indeed very frequent occurrences, more particularly the latter, but they ought always to be had in view as possible accidents.

At p. 68, "the crotchet," you say, "has been successfully employed in dimensions that will probably be thus acquired" viz. by the section of the symphysis pubis. Let me here ask you, if you, upon reflection, can think it adviseable, that a child should be absolutely sacrificed, for the mere *probability* of being able to deliver the mother?

For my own part, after much reflection upon the subject, I am induced to believe, that the destruction of a child by Embryulcia is a justifiable homicide only, when performed with a *certainty* of effecting the delivery, and a considerable expectation, or *a high degree of probability*, of preserving the life of the parent. I am decidedly of opinion, that it ought not to be practised as an experiment, *upon a bare probability* of being able to accomplish the delivery. I therefore declined the operation of Embryulcia in the two cases of Ann Lee, and Isabel Redman; because I was well assured, that I could not have delivered them, after having had recourse to this very painful and shocking expedient. And I performed the

Cesarean operation, by which means I preserved one life. and I am satisfied, from the inspection of the bodies after death, that no practitioner could have done more.

How unspeakable must be the distress of an accoucheur, if, after having destroyed the fœtus, he should find it impossible to deliver his patient, *per vaginam!* And if the painful alternative should be, after using extreme violence in vain, to leave the poor creature undelivered, or to have recourse to the Cesarean operation, under such distressing, and hopeless circumstances.

An attempt has been made to render the operation of embryulcia less shocking, by depreciating the value of the life of the fœtus, and by denying, that it possesses the power of sensation. "But as children before birth," says Dr. Osborn, "are incapable of mental apprehension, so it is as undoubtedly true, that they are not yet arrived at, or in the possession of bodily sensation, and cannot therefore suffer pain, or become objects of cruelty." Essays, &c. p. 204. And we are told by him, at p. 205, that "A strong presumption that such, however, is the state of the case, arises from this observation; that although children do often die in utero, yet the mother never can discover, by her feelings, when death

takes place there. The disease of which the child dies, and the act of dying, are equally unknown, and unnoticed by her. The cessation of the accustomed motion, is the first, and, for some time, the only difference observable by the mother, between the life and death of the child in utero."

As the nervous system of the fœtus is totally independent of, and unconnected with, that of the mother, although the former were possessed of the most exquisite sensibility, I do not see how the mother should know any thing of the disease, or uneasy sensations, immediately preceding its death, unless these should excite convulsive motions; in which case, I have been frequently informed by mothers, that they have been conscious of them, and have dated the deaths of their infants from that period. This argument, therefore, has not the least tendency to prove the fœtus devoid of bodily sensation, and the Doctor seems to be aware of its insufficiency, for he afterwards says, at p. 206, "This conjecture, therefore, may not be considered as sufficient evidence, however presumable, that the child is not yet arrived at bodily sensation, before birth takes place. But the following observation, I think, must be esteemed *incontestible evidence* of the truth of the assertion.

When we are compelled, by dreadful necessity, to open the child's head, while we know it is yet living in utero, that operation requires such extreme and painful violence, that were the child endowed with the slightest sensation, he must of necessity feel it; and his feeling must necessarily be accompanied with such struggles and exertions, as would be emphatically expressive of pain, and must be readily perceived by the mother, in a part so sensible, and irritable as the uterus.

Upon accurate and repeated inquiry in several such cases, I could never learn, that the mother was sensible of any such alteration in the motion of the child, even at the commencement of the operation, when the violence offered to it first takes place, and must be most painful. We are, therefore, I think, warranted in the conclusion, that no sensation whatever does exist at that time; and that no cruelty, or barbarity, can be said to be committed upon a being absolutely without feeling."

In reply to this observation, I shall observe, 1st. that it is contradicted by my own experience (and as I am informed, by that of others); for in more cases than one, where I have had occasion to use the perforator, the mother has ex-

pressed her consciousness of the violent struggles of the fœtus; and I have, at the same time, been sensible of the motions of its head, although in the absence of the uterine contractions. That the life of a fœtus should sometimes be extinguished, without one convulsive motion being produced, is not at all wonderful, when we reflect upon the previous compression of the head of the child, and the extreme violence done to the brain, by pushing the perforator into it. Does not extreme injury, done to the brain of an adult, frequently extinguish life so instantaneously, that no struggle intervenes between the receipt of the injury and death? and

2dly. Admitting this observation, as universally true, it would, in my opinion, prove more than was intended, for it would tend to establish the want of irritability in the unborn infant, which, I presume, Dr. Osborn, will hardly contend for.

In confirmation of his opinion, the Doctor says, "that bodily sensation would be of no service to a child in utero, and nature never performing works of supererrogation either in the moral or physical world, I must believe it has no feeling before birth." Ibid. p. 449.

To me it appears that bodily sensation is necessary, and I am not certain, that it is not equally as necessary as bodily motion, to the fœtus in utero; and as the latter power is most certainly possessed, I do not see why the former should not. Besides, I have little doubt, that the motions of the fœtus very frequently take place in consequence of the uneasy sensations, arising from its limbs remaining too long in one position; and as the power of moving our limbs is frequently impaired by suffering them to remain too long in one position, sensation appears to me as necessary, in order to obviate the ill effects of the want of motion of the limbs in utero, as it is in the early periods immediately subsequent to birth; in which no doubt can surely be entertained, that the child can both feel and move.

Having thus answered the arguments, adduced with the view of proving the fœtus in utero devoid of sensibility, I will now state my reasons for considering the fœtus, as equally, if not more sensible, than at any other period of life.

1. The *Brain* and *Nerves* are larger, in proportion to the rest of the system, in the fetal state than afterwards.

2. A child born in the seventh or eighth

month, or even earlier, gives the most unequivocal proofs of its powers of sensation, immediately on its being ushered into the world.

3. There does not appear to be any power, acting upon the fœtus in utero, which can destroy, or even impair the communication between the nerves and the encephalon; or in any way render the latter incapable of receiving impressions.

If then the *genus nervosum* be in excess, and proved to be susceptible of sensation, before the ninth month, and no power can be shewn to act upon it, which can destroy, or blunt this faculty whilst it remains in utero, I think we may consider it, as proved beyond all doubt, that the fœtus is possessed of acute sensation before birth.

The comparative value of the life of the child, and parent, I do not mean to discuss in this place. But I will just put one question to you; Do you think, that a healthy child's life ought to be sacrificed, for the chance of preserving, for a few months, a mother labouring under an incurable disease, burthensome to herself, her friends, and society?

I had almost forgotten to notice the following

assertion, which occurs at page 65 of your Reflections, " Many experiments have been instituted to ascertain the space that would probably be gained by the separation of the bones at the symphysis pubis, without injuring the sacro-iliac ligaments, and, in some that I witnessed, it appeared to me to be sufficient for the purpose." Do you mean to say, that you have seen as much space gained by the sectio symphysis pubis, as would enable you to extract a child through a pelvis so extremely distorted as you have stated, without tearing asunder the sacro-iliac synchondroses? Have you ever seen this operation instituted on a dead female, who had a materially distorted pelvis? For my own part, in the two winters that I attended the Dissecting Room at St. Thomas's Hospital, I never saw a body with a distorted pelvis introduced; and if the Windmill-street Room afforded more than one, you were fortunate in seeing the experiments instituted in these cases. Perhaps you will be so good as to state the dimensions of the pelves, before and after the Sectio Symphysis Pubis, in the experiments you witnessed, and also who were present at them.

You conclude this most extraordinary performance with saying, " I hope that in future all traces of the Cæsarean operation will be banished

from professional books; for it can never be justifiable during the parent's life, and stands recorded only to disgrace the art."

Your modesty is eminently conspicuous in this quotation. You have here opposed *your own opinion* to the *judgement of the most eminent practitioners in this Island, as well as on the Continent.* In London we find, that the following Gentlemen approved of, and assisted at, the two Cesarean operations, performed in that city, namely, Drs. Cooper, Ford, Cogan, Bromfield, Garthshore, Hunter, James Ford, Mackenzie, Orm, Underwood, Lowder, Heineker, Maclaurin, and Wathen, Messrs. Hunter, Thompson, Hewson, Patch, and Graves. In Edinburgh, the Professors, and the most eminent Surgeons, whose names it is unnecessary to recount, have given their sanction to the propriety of performing the Cesarean operation.

Having now repelled your foul attack upon my professional character, by proving satisfactorily, *that your book is an assemblage of unjust and malicious insinuations, of pernicious precepts, of gross misrepresentations, false assertions, and mutilated extracts,* I might venture to lay down my pen; But conscious of having done my duty in

the *case*, alluded to by you, as "a late occurrence," and for the management of which, I have fallen under your severe, and ill-founded censure, I do not shrink from a publick investigation of my conduct. I shall, therefore, proceed to give a detailed account of this, and also of a former case of Cesarean operation, which occurred to me, some years ago, and shall willingly leave it to be determined by my professional brethren, whether, in both cases, I have not acted in the best possible manner under such unfortunate circumstances.

The Case of Ann Lee.

On Sunday, the 23d of September 1798, about ten in the evening, I was desired to visit this poor woman, then living in Cumberland-Street, Manchester.

From Mr. Brigham, whom I met in consultation, I learnt, that he had attended her since Sunday the 16th, and that Dr. Le Sassier and he had visited her conjointly, since Tuesday the 18th; that, on Monday night, she was attacked with a convulsion; that on Tuesday she experienced a similar attack, and that on Wednesday she had five convulsive paroxysms, which were very severe, and succeeded by stupor and delirium; that he had ascertained the pelvis to be

very much deformed at its superior aperture on Tuesday, and had intimated his doubts as to the possibility of a delivery *per vaginam* to the attendants; that, on Thursday, the Orificium Uteri was dilated to about the size of a crown-piece, that the membranes burst on that day, and the os uteri, on Friday, was become again so much contracted, as scarcely to admit one finger, and the presentation of the child still indistinct; that, on this day (Sunday the 23d), finding no change, he judged it impossible to deliver her with the crotchet. He moreover informed me, that the patient considered the child as alive, and that the attendants believed they had very lately felt the motion of it externally; that he could not be quite certain what part of the child presented; and that Dr. Le Sassier, in consequence of some engagement, could not attend.

In addition to this information, I learnt from her mother, that our patient was twenty-seven years of age; that she was of very low stature; that she was ricketty, when an infant, and unable to walk at all, till she was two years old; that she had enjoyed a good state of health, during her pregnancy; that she had never been subject to convulsions, except during the period of dentition, and that she had been in labour of her

first child since the morning of Friday, the 14th of this month.

Her pains were now very frequent and excruciating; her belly painful, on very slight pressure, her pulse beating from 140 to 160 strokes in a minute, her hands clammy and cold; and her spirits and strength much exhausted. On an examination, *per vaginam*, I ascertained, that the head of the child presented, and I could distinctly feel a *Suture;* but every part of the head was above the superior aperture, and at some distance from the Orificium Uteri, which was thick, rigid, and so much contraced, that it would not, without difficulty, admit the introduction of more than one finger. A portion of the Cervix Uteri was within the cavity of the Pelvis, and both this part and the vagina were extremely sensible to pain; for she could not bear the gentlest examination, without uttering the most piteous complaints.

It was not an easy method to ascertain, with precision, the dimensions of the conjugate diameter at the brim of the Pelvis, owing to the Cervix Uteri being interposed between the Symphysis Pubis, and Os Sacrum, as stated above: But after taking a great deal of pains, I satisfied myself, that there was not, in any one point, from

the anterior to the posterior part of the superior aperture, the space of one inch and a half, and that the parietes uteri occupied more than one third of this space. The inferior aperture of the Pelvis did not appear to me to be very different from the common size and form.

Having practised Midwifery more than twenty years, and having been, during the greatest part of the time, in very extensive practice, in a very populous neighbourhood, I have had occasion to use the perforator and crotchet very frequently, and also to be present, when they have been employed by others; and knowing from experience, that the use of those instruments is neither easy to the operator, nor perfectly safe to the mother, where there is only a space of two inches, or even somewhat more, in the direction above specified; and knowing also that the base of the Cranium of a moderate-sized fœtus measures, at least, two inches, from one side to the other; I was induced to regard the operation of *Embryulcia*, as totally inadmissible in the present case. And I declared, immediately after I had examined this unfortunate female, to Mr. Brigham, that I was decidedly of opinion, that she could not be delivered without employing the Cesarean section; that the life of the child, if it were then alive, as the mother repeatedly and positively

declared it to be, might be preserved by the operation; that much expectation of the recovery of the mother could not be entertained, on account of her present deplorable situation; but that I was satisfied this operation would afford her a better chance of life than any other means, which could possibly be adopted.

Mr. Brigham then made another careful examination, and informed me that his sentiments corresponded with mine.

After waiting a little time, in order to observe in what manner the pains recurred; how she supported them; and whether it was probable that any part of the child's head would descend into the Pelvis, I examined her a second time, and finding every circumstance, as before stated, I did not think myself justified in waiting any longer. We therefore mentioned, first to the mother of our patient, and some of the attendants; and afterwards to the patient, that unless the Cesarean operation was submitted to, we really believed that she could not be delivered. And we wished them, if they were desirous to have the opinion of any other medical gentleman upon the case, to call him in without delay.

We were very soon informed, that the poor

woman was willing to submit to any practice, that we might think it necessary to adopt; and that they did not wish for any further advice.

Dr. Le Sassier had been sent for, but was engaged, and could not attend. I then called upon my friend Mr. Tomlinson, and desired to have his assistance. He very obligingly accompanied me to the house of the patient, and having made a careful examination of the Pelvis, agreed with me very nearly as to its dimensions. We deliberated for some time upon the case, and then begged the favour of Mr. Hall's attendance.

Mr. Hall joined us, as soon as he possibly could, and having examined the poor woman with great care and attention, assured us, that the distortion was greater than he had ever before witnessed in practice, and that he was decidedly of opinion, that the delivery could not be accomplished by the crotchet.

We examined the poor creature once more, and after a consultation of great length, in which every circumstance of the case was fully considered, we were unanimously of opinion, that there was very little chance for the recovery of the mother, and that the Cesarean operation, as giving the only chance of preserving the child's

life, was the most eligible practice that could be adopted, and much preferable to suffering the poor woman to die undelivered.

Every thing being previously prepared for the operation, I performed it in the following manner, about five o'clock on Monday morning. I made a transverse incision, nearly six inches in length, and higher than the Umbilicus, in the right side of the abdomen, to which part the fundus uteri was inclined, through the integuments, muscles, and peritonæum. I then made an incision of the same length, and in the same direction, through the parietes of the Uterus, and with great ease, and expedition, extracted a child, rather larger than the middle size, and which, from the separation of the cuticle, appeared to have been dead some days. The placenta was extracted, at the wound, without any difficulty. The intestines now began to protrude at the wound, and it was not without a great deal of attention, and trouble, that they were reduced, and retained in the cavity of the abdomen, whilst I stitched the external incision, by means of the uninterrupted suture, carefully avoiding the peritonæum.

The quantity of blood lost, during the operation, was believed not to exceed three or four ounces; and no artery was divided, that required

a ligature, or any application, to be made to it for the purpose of restraining hemorrhage.

The poor woman bore the operation with great fortitude, and almost without uttering a complaint. Before she was removed from the table, she became faintish, and had a propensity to vomit. She was carried to bed, as soon as possible, after the operation, and took about thirty drops of Tinctura Opii in a draught. Her pulse was at this time more feeble, and equally as frequent, as before the operation.

On visiting her at ten o'clock the same morning, the symptoms were become so extremely unfavourable as not only to preclude all hopes of her recovery, but all expectation of her remaining alive many hours. Her pulse was excessively frequent, small, weak, and irregular; she was extremely faint, and restless; her face was pale, and contracted; her respiration was very much hurried; but she was not delirious.—No discharge had taken place, *per vaginam*.

From this time she sunk gradually, and expired about eleven o'clock, six hours after the operation.

Having obtained permission to inspect the bo-

dy of our ill-fated patient, Dr. Le Sassier, Mr. Brigham, Mr. Tomlinson, Mr. Hall, and myself, assembled in the evening of the same day.

On opening the abdomen, which was not much tumefied, we observed a thin coagulum of blood, overspreading part of the uterus, and extending, on each side, over a portion of the small intestines. It was supposed to weigh about two or three ounces. This being removed, the uterus was found moderately contracted, and contained a small quantity of coagulated blood within its cavity. The lips of the wound were near together, but were not, in any point, united. There was no appearance of inflammation in the immediate vicinity of the wound; but that part of the peritonæum, investing the hypogastric region, and the inferior portion of the body and cervix uteri, exhibited very strong marks of inflammation.

The Pelvis being cleared of all the soft parts, diminishing its capacity, the dimensions of the superior aperture were accurately taken, and found to be as expressed in Plate III, engraved from a drawing, which I made; viz.

The *Diameter*, in the widest part, four inches and a quarter.

The *Conjugate Diameter*, taken from the *Symphysis Pubis*, to the nearest point of the Projection of the *Os Sacrum*, one inch and five-eighths.

The *Conjugate Diameter*, taken from the *Acetabula* to the projection of the *Os Sacrum*, one inch and nine-sixteenths, on each side.

And the dimensions from the anterior to the posterior part of the pelvis, beyond the points specified, were still narrower on both sides.

The distance from the anterior, and superior, spinous process of one *Os Ilium* to the other was eight inches and a half.

The dimensions of the inferior aperture, and cavity of the Pelvis were not taken, as they did not appear materially contracted. The child was larger than the middle size. The *Base of its Cranium*, taken from the point of one *Processus Mastoideus* to the other, and strongly compressed between the Callipers, measured one inch and seven-eighths.

The body of this poor woman, being measured, was found to be only four feet two inches in height.

Certificate.

We, whose names are hereunto subscribed, do certify, that the above statement, so far as we were respectively concerned, is accurate; and, that we are decidedly of opinion, from a careful comparison of the dimensions of the pelvis with the volume of the child, that Ann Lee could not have been delivered by the Perforator and Crotchet.

Richard Hall,
Wm. Brigham,
P. Le Sassier,
G. Tomlinson.

The Case of Isabel Redman.

This poor woman, the wife of Thomas Redman of Blackburn, was in the thirty-third year of her age, and in the last month of her fourth pregnancy, when on Wednesday, the 17th September 1794, she sent for Mr. Abraham Chew, at that time one of my pupils. She informed him that she should be at her full time of utero-gestation about the end of that month; that she had severe pain in the abdomen, although different from the pains of labour; that she was costive, had incessant vomiting, great difficulty of breathing, and a troublesome cough.

He thought proper to examine her *per vaginam*, in order to ascertain, whether the pains had produced any effect upon the state of the *orificium uteri ;* and was extremely astonished by the narrowness of the inferior aperture of the pelvis, on discovering that he could not pass more than one finger between the Rami of the Ossa Ischia, in one part, and scarcely the points of two fingers, any where, between this narrow point and the *Symphysis Pubis*. He also discovered, that the pelvis was extremely contracted in its dimensions at the superior aperture.

He immediately made me acquainted with these circumstances, and I accompanied him to her place of abode ; which was a wretched cellar near Byrom-Street.

On enquiring into the previous history of her case, I learnt the following particulars : She was married about the age of twenty-four, and was delivered of her first child about a year afterwards ; her labour being smart, but unattended with any remarkable circumstance. After her recovery from this lying-in, she experienced considerable pain about her loins, with some degree of lameness ; and after some time conceived, and bare a second child. This labour was easy, and expeditious.

The pain about her loins, and the lameness continued to encrease. And she again became pregnant, and bore her third child about twenty-two months ago.

At that time she was very lame, extremely weak and emaciated, and was attended by the late Mr. Aspden, a Surgeon then in practice at Blackburn. From whom I learnt, that the child presented an arm, and was of a small size; that he turned it without any difficulty; and that there was, at that time, no material deformity of the pelvis; but that she was then so much debilitated, that he thought she would have sunk under the delivery; and that she, very contrary to his expectation, recovered from her confinement.

It was nearly a month after this labour, before she was able to stand; and she was never afterwards able to walk without crutches. Her stature gradually diminished, and she was of opinion, that she was at this time a foot lower than she had formerly been. She was not sensible of any other deformity except the change, which had taken place about her hips. Her health had been wretchedly bad through the whole of her pregnancy, and extreme poverty had added much to the distress occasioned by her disease.

On examining the abdomen, I observed, that the space between the Pubes and Sternum was uncommonly short, and the uterus, for want of room, was placed nearly transversely, the fundus projecting very much forwards and over-hanging the pubes, with a slight inclination towards the right side. On an examination *per vaginam*, I found the dimensions at the inferior aperture of the pelvis, as they had been stated to be by Mr. Chew; and I also satisfied myself, that the superior aperture was excessively deformed. I found in one part, on the left side of the pubes, the narrowness so extreme, that it would barely allow the introduction of one finger; and, although there appeared to be a little more room on the right side, I was convinced, that there was not sufficient space to allow of her being delivered by the Perforator and Crotchet.

The deformity of the Pelvis was evidently the effect of that state of the bones, which is named Malacosteon, and had been very rapidly induced.

The troublesome symptoms, under which she now laboured, namely, dyspnœa, constipation, incessant sickness, vomiting, and pain in the abdomen, appeared to be occasioned principally by the undue pressure of the uterus upon the intestinal canal, and the Diaphragm; but from

their continuance, the frequency of her pulse, thirst, and the increased heat of the body, I was apprehensive, that inflammation had supervened, or would shortly take place, unless her complaints could be relieved by medical treatment.

The exhausted state of her body appearing to render any evacuation of blood inadmissible, and V. S. not being very powerful in removing inflammation, arising from a mechanical cause, whilst that cause continues to operate with its full force, I directed a laxative glyster to be injected, and frequently repeated, and a Solution of Kali to be given, in the act of effervescence with lemon juice, and the addition of ten drops of T. Opii every four hours. Oleum Ricini was also administered, &c. &c.

She was visited two or three times every day, and her symptoms not yielding to the treatment employed, I began to be apprehensive that she would die, before the commencement of her labour.

I gave the husband (whom I acquainted with the deplorable state of his wife) very strict orders to inform me of it, the instant she perceived any circumstance, that indicated the accession of Labour. And on Sunday the 21st, at ten p. m.

I was called to her, the membranes having just given way. The tension and pain of the abdomen being somewhat relieved by the discharge of the Liquor Amnii, which was in large quantity, and labour pains not coming on immediately, she appeared to be in much better spirits, and was in hopes of getting some sleep, I therefore left her, and desired to be called as soon as the pains became material.

I was called to her again, about six o'clock, on Monday morning, and took Mr. Aspden with me to the house. We found, that she had not slept as she expected, and that her pains were pretty frequent, but not powerful. On examining her at this time, we could not ascertain the position of the child; but Mr. Aspden satisfied himself, that the deformity was so great, as to preclude all possibility of a delivery by embryulcia.

About nine the same morning, Mr. Fisher, and Mr. Danson, both attended at my request. We were now able to distinguish the head presenting, but every part of the cranium remained above the superior aperture of the pelvis.

It being our unanimous opinion, that the Cesarean operation was the only resource for the

preservation of the life of either the mother or child, the poor woman was made acquainted with our sentiments; and, without the least hesitation, submitted to the operation.

At ten o'clock a. m. I performed the operation, in the presence of all the gentlemen, mentioned above, in the following manner.

As the uterus occupied the middle part of the abdomen, with only a slight inclination to the right side, I made an incision through the Integuments, Tendons of the abdominal muscles, and Peritonæum in the course of the Linea alba, from about four inches above the Umbilicus, to nearly two inches below that part, and only so much to the side of the *umbilicus* as was necessary to avoid wounding it. The Uterus was placed in immediate contact with the parietes of the abdomen, at the upper part of the incision; but, towards the lower angle of the wound, the intestines intervened, and began to protrude, as soon as the external incision was completed.

I then cautiously divided the uterus, and finding the placenta attached to the part I had divided, I cut through a portion of it, and enlarged the wound by a probe-pointed bistouri, directed by my finger introduced at the wound, to the size of

the external incision. The upper angle of the wound in the uterus extended nearly to the fundus.

The left nates of the child presenting at the wound, by laying hold of the thigh, I extracted it very expeditiously, and with great ease. The child was a fine healthy boy, and cried violently the moment it was brought into the world. The Placenta was removed without any difficulty. The intestines now beginning to protrude through the whole of the wound, the position of the patient's head was lowered, and Mr. Fisher, having returned the large prolapsed portion of the intestines, with a good deal of difficulty retained them within the cavity of the abdomen, by introducing his hand at the wound, and spreading his fingers over them, till I began to stitch up the wound by the interrupted suture.

The parietes of the abdomen being extremely thin, the ligatures were placed very near each other, and I carefully avoided passing the needle through the peritonæum. The ligatures were supported by straps of adhesive plaster, and a little lint, and a pledget of tow being laid over the plaster, a many-tailed flannel bandage was applied lightly round the abdomen, and secured

above by a Scapulary, and below by a slip of a roller passed under each thigh.

Not more than six or seven ounces of blood were lost during the operation. The patient was scarcely heard to complain. She grew faint and sick, and retched a little, before she was removed from the table. This faintness continued for some time after she was laid in bed, and her pulse being very frequent, small and weak, a little Volatile Alkali was given to her in a Julep, every half hour, and a small quantity of wine and water was allowed her. She had taken an opiate just before the operation was begun.

At one o'clock p. m. I saw her, and found her faintness and other symptoms abated, but her pulse was small, and feeble, and beat more than 140 strokes in a minute.

At four p. m. I visited her again. She was now much recruited, had been free from sickness since my former visit, had a moderate discharge *per vaginam*, and did not complain of much pain. Her pulse was not so feeble as before, but very frequent, viz. about 144 in a minute.

At eight p. m. Her strength and spirits were

much raised, her countenance natural, and she spoke with confidence of her recovery, but her pulse was still as frequent as before. An opiate was given her at bed-time.

Tuesday, at four a. m. Having been called up to visit her, I was informed that she continued tolerably easy till midnight; that she then began to vomit, and to talk incoherently; and that her strength manifestly declined. She was still able to give a rational answer to any question, which I put to her, but rambled when not spoken to; her pulse was about 160 in a minute, weak and irregular, her respiration much hurried. From this time she continued sinking gradually, and died, about half past seven, the same morning, without having any convulsions.

Appearances on Dissection. At three o'clock in the afternoon of the same day, in the presence of the gentlemen mentioned above, having obtained permission of her friends, I opened the abdomen, which was not materially tumefied. The lips of the external wound had remained in perfect contact, but no union had taken place in any one point; and there had been a slight ouzing of a bloody water from the wound.

On exposing the cavity of the abdomen, a co-

agulum of blood, about four or five ounces in weight, was observed, adhering to the anterior, and superior part of the uterus. The Uterus was nearly as large as the head of a new-born infant. The incision, which extended from near the fundus downwards, was nearly four inches in length, the lips of the wound were not at all united, they were not indeed in close contact. The Uterus was now about an inch thick, and felt rather like paste. No part of it was inflamed.

Neither was any inflammation observed of any part of the small intestines, although much exposed during the operation, nor upon any of the abdominal viscera, except a portion of the Colon near its origin from the Cæcum, which was indeed much inflamed, and was supposed to have been so previously to the operation.

The Pelvis being removed, its dimensions were carefully and accurately taken. It afterwards was macerated, and when sufficiently cleaned, two Drawings were made from it by an ingenious Artist, and the annexed plates were also engraved by him. In justice to him, I ought to say, that 500 of the best Impressions of each Plate are reserved for another publication.

The Pelvis is rendered lighter by the absorp-

tion of a part of the Phosphate of Lime, and is somewhat softer than in the natural state.

From the Crista of one *Os Ilium* to the other, at the most distant points H H Plate I. it measures ten inches and a half.

Dimensions of the Superior Aperture. See Pl. I.

The Conjugate, or Antero-posterior Diameter from the *Symphysis Pubis* to the 4th Lumbar Vertebra A A, is two inches and three tenths. This diameter is not taken from the *Os Sacrum*, or its junction with the last *Lumbar Vertebra*, because the point of their junction is so much sunk within the cavity of the pelvis, that the place, it should have occupied, is represented by the 4th Lumbar Vertebra.

The Diameter G G measures five inches and two eighths; it is taken from very near one *Sacro-Iliac Symphysis* to the other.

The Oblique Diameter, from the right *Sacro-Iliac Symphysis* to the *Linea Innominata*, opposite the nearest point of the left *Acetabulum*, is 4 inches.

The Oblique Diameter, taken from the left

Sacro-Iliac Symphysis to the *Linea Innominata*, at the right *Acetabulum*, is four inches and one tenth.

The distance from the right *Sacro-Iliac Symphysis* to the *Symphysis Pubis* G A is five inches.

The distance of these two points, on the left side, is four inches and eight tenths.

The distance from that part of this aperture, which corresponds with the posterior part of the right *Acetabulum*, to the *Os Sacrum* F F, is one inch and one sixteenth.

The distance of the point of this aperture, which is opposite to the anterior part of the right *Acetabulum*, from the articulation of the two last *Lumbar Vertebræ* E E, is seven eighths of an inch.

The distance of the point of this aperture, opposite to the posterior part of the left *Acetabulum*, from the *Os Sacrum*, in the direction D D, is one inch and one sixteenth.

The distance of the point, corresponding with the middle part of the left *Acetabulum*, from the articulation of the two last *Lumbar Vertebræ*, in the direction C C, is not quite five eighths of an inch.

The distance of one *Os Pubis* from the other, in the points marked B B, is seven eighths of an inch.

The largest Circle, that can be formed, in any part of the superior aperture, does not exceed in diameter one inch and three eighths.

a. The fourth Lumbar Vertebra.
b. The extremity of the Os Coccygis.
cc. The Spinous Processes of the *Ossa Ischii*.
dd. The *Foramina Ovalia*.
ee. The *Ossa Ilia* appear as if partly broken in these parts. And at B B the same broken appearance of the *Ossa Pubis* is observed.

The upper margin of the *Symphysis Pubis* is six tenths of an inch higher than the uppermost point of the *Acetabula*.

Dimensions of the Inferior Aperture. See Plate II.

The Transverse Diameter taken from one *Os Ilium* to the other, in the direction B B, measures five inches and two eighths.

The Transverse Diameter, taken from the Spi-

nous Process of one *Os Ichium* to the other, in the direction C C, is two inches and six eighths.

The distance from the Spinous Process of the left *Os Ichium* to the *Os Coccygis* is rather more than one inch and six tenths.

The distance from the Spinous Process of the right *Os Ichium* to the *Os Coccygis* is one inch and one sixteenth.

The Conjugate, or Antero-posterior, Diameter, taken from the *Symphysis Pubis* to the point of the *Os Coccygis* A A, is three inches and three quarters.

The distance from one *Ramus Ossis Ischii* to the other, at E E, is seven-tenths of an inch.

The distance at the points F F, where the Rami of the *Ossa Ischii* and *Pubis* are joined, is one inch and a half, but more inwards these parts are only one inch asunder.

a a The two last *Lumbar Vertebræ*, with the *Os Sacrum* beneath, completely sunk into the cavity of the Pelvis.

b b The Tuberosities of the *Ossa Ischii*, which

are distant from each other, at the most remote points, three inches and three quarters.

cc The Acetabula.

The depth of the Pelvis at the posterior part, if taken from the top of the *Os Sacrum*, is nearly three inches; if taken from the top of the fourth *Lumbar Vertebra* is five inches.

The distance of the junction of the *Os Sacrum* with the last *Lumbar Vertebra*, from the junction of the *Os Sacrum* with the *Os Coccygis*, is one inch and eight tenths, and the distance, from the base of the *Os Sacrum* to the point of the *Os Coccygis*, only one inch and two tenths.

The depth laterally, from the brim to the lowest part of the *Tubera* of the *Ossa Ischii*, is three inches and a half, and the Tuberosities are thrown unusually forwards.

The depth anteriorly, from the upper margin of the *Symphysis Pubis* to the lowest point of the *Tubera Ossa Ischii*, is four inches and a half.

The Form is too irregular to allow of the axis of the pelvis being easily given.

It has been already shewn, that its position with regard to the spine, is in a very great degree changed; the *Ossa Pubis* being placed considerably higher than the uppermost point of the *Os Sacrum*, which will, in some degree, account for the poor woman's great loss of stature.—As the *Os Sacrum*, descended within the cavity of the pelvis, the inferior portion of it was bent upwards so much, that the point of the *Os Coccygis* is situated nearly as high as the base of the *Os Sacrum*.

Mr. Kay, of Forfar, having been so obliging as to favour me with a detailed account of the case, in which he lately practised the Cesarean section, and the permission to publish it in this letter, I shall in this place give the

Case of Jannet Williamson.

" I was called to Jannet Williamson, a married woman, aged thirty-eight, in the Parish of Kirriemuir, Shire of Forfar, early in the morning of September 14th, 1798; and was informed, that she had been in labour, during the three preceding days; that the membranes gave way very soon after the commencement of the labour; and that her pains had been very frequent, and severe. I was told, that Mr. Douglass, Surgeon in Kerriemuir, was called on the 13th, but did not re-

main long with her. On making an enquiry into the previous state of her health, I learnt, that she had been afflicted with severe pains, supposed to be *rheumatic*, for some years ; by which she was so much emaciated and debilitated, as to be confined to her bed for the last six or seven months; that for a considerable time she had not been able to move any of her extremities without assistance ; and that the least motion, in this way, occasioned very excruciating pain in the part moved.

On examining her *per vaginam*, I could with one finger feel a small part of the child's head, above the superior aperture, towards the right side of the Pelvis. On attempting to ascertain the dimensions at the brim, I was astonished to find it so much contracted, by the approximation of the last Lumbar Vertebra and the Os Sacrum to the Ossa Pubis, as only to allow the *points* of two fingers to be pushed upwards, on the right side, at the part where the child's head was felt. And the left side was considerably narrower, for I could not in this part introduce one finger.

The lower aperture was much smaller than natural, but I did not examine it very particularly, as the great obstacle to delivery was in the superior aperture.

Considering her deplorable situation, and knowing that in a former labour, about three years before, she had been delivered, with great difficulty, of a small dead child; suspecting also that the deformity had been encreasing ever since, I told her husband, and the attendants, that there was no possibility of delivering her, but by performing the Cesarean operation, which I described to them; and having occasion to visit a gentleman, in the neighbourhood, I desired them to acquaint the poor woman, and to come to a determination, respecting it, before my return, which would be in a few hours.

Having to pass the town of Kerriemuir, I called, on my return, in the afternoon upon Mr. Douglass, to have his opinion upon this lamentable case. Mr. Douglass being of opinion that she would die undelivered, I told him it was my design, if the patient and her friends should give their consent, to perform the Cesarean operation, and begged his assistance.

When we arrived at the house of our patient, Mr. Douglass examined her, and found her in the same situation, as on the preceding day. And the poor woman being made acquainted with our concurrence in opinion, consented without he-

sitation, and seemed anxious to have the operation performed as soon as possible.

The intestines had been emptied by an injection in the morning; and she had made water a short time before, we therefore immediately began to prepare for the operation.

Having placed her as well as we could, in bed, upon her back, but more upon the right side than I could have wished, her thighs and legs being so much contracted that she could not be placed otherways, I began the incision on the left side, a little below the umbilicus, with a convex scalpel; and having cut carefully through the integuments, muscles, and peritonæum, which were very thin, to the extent of an inch, I introduced my finger, and using it as a director, enlarged the incision in an oblique direction upwards, and outwards to nearly six inches. The uterus now appearing I made an incision through its parietes, at the the lower part of the external wound, and carried it upwards and outwards nearly to the fundus, in the same direction, and to the same length as the wound in the parietes abdominis. The placenta being attached to this part of the uterus, I could not avoid dividing a portion of it, about two inches in extent. Whilst I was cutting the parietes of the abdomen and

uterus, there was very little hemorrhage, but it became more considerable during the division of the placenta.

Mr. Douglass supported the abdomen with a hand on each side of the incision, whilst I extracted the child, which was alive, but weakly. The uterus contracting quickly, I with very little trouble brought away the placenta.

Having wiped away the blood, I brought the sides of the external incision together, and secured them with three ligatures, and having covered them with lint, and a compress, I applied a roller.

The operation did not take up much more time than four minutes, and the discharge of blood did not exceed what happens in an ordinary labour. The poor woman bore the operation remarkably well. Her pulse was rendered feeble by it, but, in a few minutes, it returned to its former state, and she expressed her happiness on being freed from the severe labour-pains.

Her pulse continued small, and very frequent; and the lochial discharge took place *per vaginam*, and in the usual quantity, for the first three days. She did not complain of any uneasiness from the

wound, and on the sixth day insisted on being taken out of bed. Her strength gradually declined from this time, and, on the eleventh day, she expired.—The external incision was not healed.—As the body was not opened, I cannot give any account of the state of the cavity of the abdomen.

I should not hesitate to perform this operation again, should a case occur, which requires it; for I consider the death of this poor woman, as owing to the extremely debilitated state of her system.

The child was sent to a nurse, when two days old, and I am happy in being able to say, that it continues healthy."

The Pelves, of which I have given figures, are excellent examples of the diversity of the deformity, induced in the infantile period of life by *Rachitis;* and in the adult state by *Malacosteon.*

In the distortion, occasioned by the former disease, the *Symphysis* of the *Ossa Pubis*, and the *Os Sacrum* are approximated, but the *Acetabula* remain as distant, from each other, as in the natural state, or even become more distant, in con-

sequence of the bones of the pubes becoming straighter.

In the latter disease, the *Acetabula* are the parts of the pelvis, which principally yield; and, by their approach to each other, and to the *Os Sacrum*, give to the superior aperture the form of a triangle, with its three sides convex inwardly; the bodies of the Ossa Pubis being rendered more or less nearly parallel to each other. See Plates I. and VII.

These are very curious facts, and are not, I think, altogether explicable from the circumstances of children, affected with *Ricketts*, being less frequently upon their legs than adults, affected with *Softness of the bones.** Although there can be no doubt, but this cause does contribute very materially to the change induced in the form of the pelvis.

To give a complete, and satisfactory, solution of these *phænomena*, we must advert to the state of the bones, composing the pelvis, in the first

* As both these diseases depend upon a deficiency of the Phosphate of Lime in the bones, affected by them, and, to a certain degree, resemble each other in their symptoms; they might, with great propriety, be referred to the same genus in a *Nosologia Methodica*, under the titles of Rachitis *infantilis*, and *adulta*.

years of life, when the mischievous effects of Rachitis are produced, although we frequently do not become sensible of some of them, as occurring in females, till the period of their first parturition.

In infancy the *Ossa Innominata* consist each of three distinct bones, named Os Ilium, Ischium and Pubis, all of which contribute to the formation of the *Acetabula*. And as, in general, the points where ossification begins, more particularly in those bones, which are not of a cylindrical form, are near the centre of each, the extremities are, consequently, the last parts, that are completely converted into bone. Hence it appears, that the extremities of each of the three bones, mentioned above as constituting the *Acetabula*, are during infancy in a cartilaginous state. And the cartilages, destined to supply the place of bone *pro tempore*, either not being at all affected, or, at least, not proportionally with the true bones, by the disease, named Rachitis; the cartilages, of which the *Acetabula* are formed, remain sufficiently strong to sustain the pressure, made upon them, by the heads of the *Ossa Femorum*; or if they yield at all, their elasticity appears sufficient to restore them to their proper state, on the removal of that pressure. So far, indeed, are they from being forced nearer each

other, that they are sometimes, as was before noticed, actually rendered more distant than in the natural state of the pelvis, owing to the *Ossa Pubis* being approximated to the base of the *Os Sacrum*, in a greater degree, at their *Symphysis* than at their *acetabular extremities ;* in which case the bodies of these bones, instead of a more curved, describe nearly a straight line. See Med. Obs. and Inq. Vol. IV. Pl. 2 and 3. Whilst, on the other hand, the base of the *Os Sacrum* and the last *Lumbar Vertebra*, from being sooner converted into bone, from being naturally of a spongy texture, and from being greatly affected by Ricketts, lose their firmness, and yield, in a very considerable degree, to the superincumbent weight of the body.

In this manner, then, from the cartilaginous state of the extremities of the bones, forming the *Acetabula*, taken conjointly with the smaller, and less frequent, pressure against them, by the heads of the *Ossa Femorum*, we see the reasons why the Superior Aperture of the Pelvis so rarely assumes the triangular form from *Rachitis ;* and so generally from *Malacosteon*. See an excellent Dissertation, published at Leyden, in 1793, *De Mutationibus Figuræ Pelvis, præsertim iis, quæ ex ossium emollitione oriuntur*, Auct. N. C. de Fremery.

To enter further into the consideration of the various degrees, and kinds, of distortion, to which the Pelvis of females is, unfortunately, subjected from various causes, is not necessary in this place, I shall, therefore, now proceed to state the dimensions of a *Fetal Cranium*, which is, I believe, smaller, in all its dimensions, than the *Cranium* of Ann Lee's child, and I shall afterwards prove, that the base of it could not be extracted through her pelvis, by the means, which the present improved practice of Midwifery affords, except by cutting or breaking the pelvis in pieces.

You will find, in Plate 4th, a very accurate view of the base of the Fetal Cranium, which I am going to describe, drawn, and engraved, by an ingenious artist, resident in Manchester.

Explanation of the Plate.

a. The Chin.
b b. The Zygomatic Arches.
c c. The Mastoid Processes.
d. The Posterior Fontanelle.
e e. The Parietal Bones.
f f. The Temporal Bones.

The long diameter of the base, extending from

the highest point of the Os Occipitis at the *Posterior Fontanelle d*, to the extreme point of the *Maxilla Inferior a*, is four inches and a half.

The short diameter, crossing the former at right angles, from one *Mastoid Process* to the other at *c c*, measures one inch and seven eighths. And the greatest distance of the *Mastoid Processes*, from each other, is two inches and three eighths.

The greatest breadth of the *Os Occipitis* is two inches and a quarter.

The perpendicular height of the *Os Occipitis* is one inch and seven eighths.

The perpendicular height of the *Ossa Temporum*, in the highest point, from the base of the cranium is one inch and a half.

The height from the lowest point of the Chin to the highest point of the nose is one inch and nearly nine sixteenths.—From the Chin to the top of the Orbit one inch and five eighths. See Plate VII.

The *Oblique*, or *Greatest* diameter of this

cranium, taken from the extremity of the chin to the most distant points of the *Sagittal* Suture measures four inches and five eighths.

The *Longitudinal* or *Antero-posterior* diameter, taken from the middle of the forehead to the top of the Occipital bone is four inches.

The *Perpendicular* diameter, extending from the base of the cranium to the vertex, is nearly three inches and a half.

The *Transverse* diameter, extending from one *Bossa Parietalis* to the other, is three inches and a quarter.

To convince you, that I have not chosen a cranium of more than ordinary size, I will transcribe Baudelocque's account of the diameters of the fetal cranium.

" § 453. Le plus grand des diamètres de la tête, dont la longeur est de cinq pouces & un quart pour l' ordinaire, passe obliquement de la symphyse du menton à l' extrémité postérieure de la suture sagittale; le moyen, qui est d' environ un pouce plus court, s' étend du milieu du front au haut de l' os occipital: le troisième traverse la tête du sommet à la base du crâne; &

le quatrième d' une protubérance pariétale à l' autre. La longueur de ces derniers est assez constamment de trois pouces & quatre a six lignes."

" § 453. The largest diameter of the head, the length of which is usually five inches and a quarter, passes obliquely from the *symphysis* of the chin to the posterior extremity of the *sagittal* suture; the middle diameter, which is about an inch shorter, extends from the middle of the forehead to the top of the *occiput;* the third passes from the summit of the head to the base of the *cranium;* and the fourth from one *parietal* protuberance to the other. The length of these latter is pretty constantly three inches and from four to six lines."* Heath's Transl. V. I. P. 267.

We will now apply the base of this fetal cranium to the Pelvis of Ann Lee, See Plate Vth. and, notwithstanding the Pelvis is cleared of all the soft parts, which, during life, diminish its capacity, notwithstanding the base of the cranium is represented smaller than it actually is, and is deprived of the integuments, &c. which add to its volume, we shall find the pelvis greatly too contracted to admit of its extraction,

* The French inch is about $\frac{1}{12}$ larger than the English.

since the dimensions of the cranium exceed those of the pelvis in every direction.

Dr. Osborn allows, that the base of the cranium is incompressible, and will not admit of any further diminution; and, as you appear to have adopted his sentiments upon this subject, as far as you have been able to comprehend them, I should suppose you will not contend, that the base of this cranium can be extracted through the pelvis, here exhibited, in the way *in which it is* now applied to it.

It is fully demonstrated then, that, after having evacuated the child's brain, after having broken in pieces, and removed, the frontal and parietal bones, neither myself, nor any other person, could, by the exertion of our utmost strength, have extracted the base of the child's cranium, whilst it remained in this position, through the pelvis of Ann Lee.

Being completely foiled in this attempt, what steps ought to be taken to accomplish the delivery? We are, with great ingenuity, informed, that the base of the fetal cranium ought to be turned sideways, and that the dimensions of its short diameter will then not exceed one

inch and a half. See Osborn's Essays, P. 229, and P. 109 of this Letter.

Let us take the pelvis cleared of the uterus, and all the soft parts, which diminish its capacity, let us apply to its superior aperture, the denuded bones, which compose the base of this cranium, in the favourable position, required above, let us consider the crotchet so applied, as not to add to the difficulty by its bulk, (See Plate VI.); and we shall still find it impracticable to complete the delivery by this instrument, owing to the bones of the face extending beyond the limits of the superior aperture on one side, and the Os Occipitis on the other side.

On applying this cranium, in the same manner, to the pelvis of Isabel Redman (Plate I.), although its transverse and conjugate diameters are considerably greater than those of the pelvis of Ann Lee, we shall find it equally impracticable to accomplish the delivery by *cephalotomia*.

Let us now compare the base of this cranium, turned sideways, with the superior aperture of the pelvis of Elizabeth Hutchinson (See Plate VII.), and the insurmountable difficulty of the case immediately strikes us.

Finally, let us form the superior aperture of a pelvis, similar to that of Eliz. Sherwood, as described by Dr. Osborn, at P. 241, and 242, and mentioned at page 111 of this letter, and upon applying this fetal cranium *sideways* to it, we shall be perfectly convinced, that it is impossible to extract a moderate-sized fœtus through such a pelvis by means of the crotchet.—We shall not entertain the least doubt, but Dr. Osborn, since he states the child to be "*moderately-sized,*" was greatly mistaken in the dimensions of this pelvis. For since the dimensions from the Symphysis pubis to the basis of the Os Sacrum did not, he says, exceed three quarters of an inch, and the space on the left side quite to the ilium, though two inches and a half in length, was not wider than three quarters of an inch; and since the base of the fetal skull, both at its facial and occipital extremities, is, when turned sideways, one inch and a half in width, it is demonstrable that neither extremity could enter the left side of the pelvis, and consequently that the left side of the pelvis was of no service in the extraction of the base of the cranium. Therefore, if a child of a moderate size were extracted through a pelvis, having the dimensions, stated by Dr. Osborn; it must follow that the base of the fetal cranium was extracted through a space rather more than two inches in length, one inch and three quarters

in width, and becoming gradually narrower at each extremity; that is, a solid incompressible body, about four inches and a half long, two inches and a quarter wide, and one inch and a half deep, was extracted *sideways* through an *unyielding* aperture (for this patient was not affected by *Malacosteon)*, rather more than two inches in length, one inch and three quarters in the widest part, and becoming "gradually narrower both towards the ilium, and towards the projection;" *the greater through the less*, which is absurd.

I am decidedly of opinion, after paying great attention to the subject, that a fœtus of a moderate size, never has been extracted, by the operation of Embryulcia, through a pelvis, which measured only one inch and a half in the widest part of its conjugate diameter; and, further, I am of opinion, that no pelvis can be produced with the above dimensions, through which it is possible to bring such a child by the above-mentioned operation, except by breaking or forcing asunder the bones of the pelvis, or by obliging them, in consequence of unusual softness, to yield to the impulse of the child's head. I therefore regard Dr. Osborn's assertion, related at page 109 of this letter, as calculated to do great mischief, inasmuch as his authority may induce the less experienced accoucheurs to destroy the life of a

child, which might have been preserved by the Cesarean operation, in cases, where they will afterwards be unable to complete the delivery by the crotchet.

Having, I hope, sufficiently determined the impossibility of delivering a woman by the crotchet, whose pelvis is no more than one inch and a half in the widest part of the conjugate diameter, I shall beg leave to call your attention, once more, to the dimensions of Isabel Redman's pelvis. The transverse diameter of the superior aperture measures 5 inches and two eighths; the conjugate diameter, taken from the fourth Lumbar Vertebra to the Symphysis Pubis, is two inches and three tenths, and, if taken from the base of the Os Sacrum, measures more than $3\frac{1}{2}$ inches.

This pelvis is, of course, more than twice as wide, from the pubes to the Os Sacrum, as the pelvis, which is stated by Dr. Osborn as constituting *a safe crotchet-case;* and it is more than three times as spacious as *you* require for the completion of the delivery by the crotchet. And yet I contend that neither you, nor any other accoucheur, can extract a moderate-sized fœtus through it, by means of this instrument, without either previously cutting, or breaking the pelvis in pieces. If you should think other-

wise, you will be enabled, by means of the engravings, and the very minute description given above, to construct one of a similar form, and to make the experiment.

And if, after being foiled in the attempt to extract a child through the whole space, afforded by the brim of this pelvis, you should still contend for the truth of your position, namely, "*that the child may be extracted by the crotchet, whatever the distortion shall be, if in any part of the cavity there shall be a space of one inch and a half in diameter,*" I would then advise you to undertake to extract a child, through the portion of the superior aperture, comprehended between the line C C, and the point G, on the left side of the Lumbar Vertebræ (Plate. I), which is rather more than an inch and a half in diameter.

I will, in the next place, endeavour to determine, whether we are likely to gain any advantage from dividing the Symphysis Pubis in excessively deformed pelves; and I shall take the pelvis of Elizabeth Hutchinson as an example; because we have an excellent engraving of it, both in its entire, and its divided state, given in the App. to Vaughan's Cases of Hydroph. Pl. I, and II. And, that publication being out of print, I have been induced to exhibit, in Plate

VII., the outline of the superior aperture in both these states, with the fetal cranium turned sideways, and applied to it.

On measuring this aperture I find, that in its entire state, when freed from all the soft parts, by which its capacity had been diminished, the *Transverse Diameter* measured four inches and a quarter; and the *Conjugate Diameter* measured rather more than two inches and a half. And yet the *Largest Circle*, that could be described between the Os Sacrum, and Ossa Pubis, amounted only to one inch and five sixteenths in diameter, owing to the Ossa Pubis being placed in a parallel direction, for nearly an inch of their length, and not more than three sixteenths of an inch distant from each other.

It is manifest, from an inspection of this Plate, that, at least, one inch of the space, extending from the symphysis pubis to the os sacrum, would not afford any advantage, except by defending the urethra, in an attempt to extract a child through this pelvis.

It is equally evident, that, in attempting to ascertain the lowest dimensions of a pelvis, thro' which a child of a moderate size can be extracted by the perfotator and crotchet, it ought to be a

primary consideration to determine the particular form of the pelvis; otherwise, we may mislead our readers in a point of the highest importance. Had Dr. Osborn, instead of taking one inch and a half from pubes to sacrum, as a sufficient space for allowing the extraction of the fœtus by embryulcia, fixed absolutely upon three inches and a half in this direction, it is demonstrable, from the pelvis of Isabel Redman, that even this space may be found insufficient, in some peculiar forms of the pelvis. We must therefore give up every expectation of having a statement, taken from the dimensions of the transverse diameter, and of the conjugate diameter from Symphysis Pubis to Os Sacrum, which will be capable of directing us, in every instance, when the delivery ought to be attempted by the crotchet, and when the Cesarean section ought to be employed.

Whenever any case of extreme distortion occurs in practice, we should endeavour to ascertain, as accurately as we can, not only the dimensions of the pelvis, from one side to the other, and from the pubes to sacrum, at the superior aperture, but the dimensions of its other diameters, both in this and the inferior aperture, and also its depth; or, in other words, we ought to make ourselves acquainted with the form of the pelvis, and all its dimensions; we ought then

to compare the ordinary volume of the base of a fetal cranium, with the cavity through which it has to pass, and calculate what advantage may be gained by bringing the base of the skull sideways, or somewhat endways, and, from this calculation, we should endeavour to determine, whether the sacrifice of the child's life will afford us reasonable expectations of preserving the parent. For, as I have before observed, I do not think an accoucheur warranted in opening the head of a living child, as an experiment. He ought, in my opinion, to be convinced in his own mind, before he has recourse to this dreadful expedient, not only that he can accomplish the delivery *per vaginam;* but, further, that there is reasonable ground for expecting to preserve the mother by this means.

I shall now beg leave to add, that in some cases, *where it is possible to extract the child by the crotchet*, the injury, which must necessarily be done to the mother, in order to effect the delivery, may, in my opinion, prove much more dangerous than the Cesarean section. And *where the child is certainly known to be dead, and the delivery cannot possibly be accomplished by the crotchet*, I am of opinion, that it is the duty of the accoucheur to propose the Cesarean operation, if he shall be

called in, before the patient's strength is so much exhausted, as to preclude every possible hope of her recovery.

A very little consideration will teach any one, that *cæt. par.* the more nearly the anterior, and posterior lines, which bound the superior aperture of an extremely contracted pelvis, approach to straight lines, the more favourable will the pelvis be found for the transmission of the base of the fetal cranium. And a slight attention to the engravings given at the end of this work, will convince any one, that an unnatural degree of curvature of the anterior, and posterior boundaries of the pelvis, may render delivery by the crotchet impracticable, although the dimensions be greater, than would be required, if the figure of the pelvis were better adapted to favour the extraction of the base of the fetal cranium.

Having seen how insufficient the pelvis, under consideration, is, in its entire state, for the passage of the fœtus, let us next view it, with its capacity enlarged by the Section of the Symphysis Pubis, and the laceration, or rupture of the Sacro-Iliac Symphyses, as expressed in Plate VII. by the dotted line.

The Ossa Pubis are separated, from each other,

to the distance of two inches and a half; and the Ossa Ilia are forced from the Os Sacrum, to the distance of more than a quarter of an inch at the anterior part of the symphysis; the bones of the pelvis are therefore separated to such an extent, as has, I believe, invariably destroyed the patient, for we have no example of a recovery, under such circumstances, recorded, that I know of.

The transverse diameter now measures, in the widest part, rather more than four inches and three quarters. The divided extremities of the Ossa pubis are on each side about three inches distant from the base of the Os Sacrum.

That part of the Linea Innominata, which corresponds with the middle of the *right* Acetabulum, is about $1\frac{1}{2}$ inch distant from the most contiguous part of the base of the Os Sacrum, and, farther back, the pelvis is of about the same dimensions from the Ilium to the Sacrum. That part of the Linea Innominata, corresponding with the middle of the *left* Acetabulum, is not so far distant from the nearest point of the base of the Os Sacrum, by nearly a quarter of an inch; but farther back the pelvis becomes again somewhat wider.

The widest circle, that can now be described,

in the intervals of the bones, amounts only to two inches in diameter.

If upon the superior aperture of the pelvis, thus enlarged, we place the same fetal cranium turned sideways, with its long diameter in the direction of the long diameter of the pelvis, we shall find, that the facial extremity on the right side, and the occipital extremity on the left side, will extend considerably beyond the limits of the pelvis; and that there will thence arise an insurmountable obstacle to the extraction in this direction. But this is an unfavourable position for the extraction of it. The most favourable direction, in which the base of the skull can be placed in the superior aperture of this pelvis, is with the chin to the left os pubis, and the occiput in the space betwixt the right os ilium, and sacrum; the next most favourable position is, with the chin to the right os pubis, and the occiput between the left os ilium and sacrum.

In either of these positions, the base of the cranium appears capable of passing sideways through this aperture, when the bones are denuded, and the head of the fœtus is separated from its neck and body. But whether it would be in the power of the Accoucheur to give to the base of the skull either of these favourable posi-

tions, and, if so placed, whether it would pass, when covered by the integuments and attached to the body, and when the pelvis is diminished in its capacity, by the uterus, &c. it is not easy to determine. But we can determine, what is much more material, namely, that the child will be inevitably destroyed by the attempt, and that so much mischief will be done to the mother, at the posterior part of the pelvis, by tearing asunder the Sacro-Iliac Synchondroses, and, at the anterior part, by cutting the Symphysis Pubis, and separating the bones to the distance, required for the delivery, as has been found to prove fatal in every instance, according to the observations and histories collected by Baudelocque.

You have, indeed, said at page 67, " The Sacro-iliac ligaments, would certainly not be injured by choice, but the consequences, I believe, are not generally fatal." But, can you adduce a *single* example of the Sigaultian operation, wherein this accident has taken place, without proving fatal to the mother ?

If, in cases of extreme deformity of the pelvis, the compound operation, recommended by you, can be thus shewn to promise so little advantage, whilst the fœtus remains in utero : Still less can be expected from it, when the fœtus has escaped

into the cavity of the abdomen, through a rupture of the uterus, as in the cases of Jane Foster, and Mrs. Scott, which occurred to Mr. Barlow, and Dr. Hamilton. In these two instances, it was impossible to perforate the child's head, and apply the crotchet.

Of the former a short account is given in the Synoptical Table at page 68. The Cesarean operation was performed, and the mother recovered.

Of the latter, which is inserted in the fourth edition of Hamilton's Outlines of Midwifery, I will give an abstract, as it will serve to shew how little reliance ought to be placed in the powers of nature, which you regard as our *only hope*, (See Page 94th of this letter,) where the pelvis is so extremely deformed as to be supposed to render the Cesarean operation necessary.

Mrs. Scott (Æt. 30) was attacked with spurious pains in the evening of March 22d, 1795.

The previous state of her health being very particularly enquired into, it appeared, that at the time of her marriage, five years before, she was a healthy, well-formed woman, and continued so till she was about three months advanced

in her second pregnancy. She then became indisposed, owing, as she thought, to exposure to cold, and was confined to her bed for some time. She felt a weakness in her lower extremities from this time, was in some degree lame, and became considerably diminished in her stature. She, however, carried this child to the full time, and bore it with great difficulty: It was born alive, but died in a few minutes.

Notwithstanding her complaints continued to increase, she conceived a third time, and in July 1793, was delivered, with great difficulty, of a full grown fœtus, which, for a few minutes only, shewed signs of life. For some time, her recovery was very doubtful, and proved exceedingly tedious. In addition to the complaints, mentioned above, she now had a *Hernia Umbilicalis*.

Her Health still declining, she conceived again towards the end of June 1794. Her height was now (March 22, 1795) diminished, in her own opinion, a foot at least, and her lameness had increased so much, within the last four months, that she could no longer use her crutches; she was unable to move farther than from her bed to her chair, and, to do this, she was obliged to support herself upon her hands. She was incapable of standing erect, and, as she could not lie

in bed above a few hours, without being affected with violent coughing, she was under the necessity of almost constantly sitting in an easy chair. She had suffered much from pain in her shoulders during the winter, which had rendered her arms extremely weak.

March 24. She was brought into the hospital.

March 31. Real labour commenced at three o'clock A. M.; the pains became very strong and frequent at four, and the membranes gave way spontaneously about an hour after. At six, the pains increased so prodigiously, both in frequency and strength, that there was the greatest reason to dread, during every pain, a rupture of the uterus. At this time she was examined with great care, and the pelvis was found to be extremely distorted. The dimensions, as ascertained after the death of the patient, were the following. "*At the brim*, from the centre of the Sacrum to the most diverging point of the Pubes, $3\frac{1}{2}$ inches; from ditto to the part, at which the Pubes approximated, $2\frac{1}{4}$ inches; from the Sacrum to the Linea Innominata, at the top of the Acetabulum, one inch and five eighths; therefore the short diameter, at the brim, was for the extent of an inch, $2\frac{1}{4}$ inches, but in the remainder of the space only one inch and

five eighths. *At the outlet*, the space between the tuberosities of the Ischia was five eighths of an inch. The spinous processes of the Ischia were distant three inches and one sixth. The point of the Coccyx, when drawn back was distant from the junction of the Ischia $2\frac{1}{2}$ inches; and the same from the tuberosity of the Ischium on the left side, but on the right side, it was half an inch less. The *depth* of the Pelvis, both anteriorly and posteriorly, was $4\frac{1}{2}$ inches."

No part of the child could be felt: And the pains continuing, as violent as before, the sufferings of the patient were truly agonizing.

At a quarter past ten A. M., the head was felt to press on the brim of the pelvis. And, a consultation being held, it was agreed to wait a few hours, in order to see whether the action of the uterus would force the head of the child lower.

About a quarter past eleven the pains suddenly ceased entirely, vomiting took place, the pulse became feeble, the countenance turned pale and ghastly, and the strength appeared very much exhausted: But there was no discharge of blood *per vaginam*. The abdomen was sore to the touch, and felt differently on being examined,

but no inequalities, like those arising from the limbs of a child, were perceived. As it was hoped that the exhaustion was the effect of her former sufferings, it was expected to be temporary only, and it was determined to administer cordials, and wait for a return of her strength. But at half past one P. M. the symptoms of exhaustion, and the pain and soreness of the abdomen, remaining, it was judged necessary to make an attempt to open the child's head. Two fingers, therefore, being passed along the Sacrum, so as just to reach the scalp of the child, the perforator was insinuated along the fingers; but on pushing forward the instrument, the head instantly receded. As no part of the child could now be felt, every attempt to deliver the poor woman was given up.

From this period she had constant vomiting, her pulse was exceedingly frequent, and feeble, and she complained of great soreness and fullness in the abdomen, but no uterine pains returned.

April 1st. In the morning she appeared much in the same state. About ten A. M. what she vomited was of a dark-green colour, resembling feculent matter. About two P. M. she passed by stool some of the same matter. In the even-

ing her extremities became cold, her pulse continued very feeble, and from 120 to 130 in a minute.

April 2. At one A M. no pulse could be felt at the wrists; the uneasiness of the abdomen increased, and her respiration became hurried. At six A. M. she grew somewhat easier, and remained perfectly sensible; but vomited a brownish stercoraceous matter, and her pulse was imperceptible. About a quarter past eight A. M. she cried out, that she felt herself growing blind, and a few minutes after expired. During the last moments, the hands were kept applied to her abdomen, to feel if the child exhibited any symptoms of life, but no motion whatever was perceived.

The body was opened thirteen hours after death. A considerable quantity of extravasated blood was found, covering the anterior surface of the intestines. A lacerated wound about four inches in length, and in a longitudinal direction, was found in the left side of the uterus. The uterus was contracted so much, as to be only about $6\frac{1}{2}$ inches in length, and $5\frac{1}{2}$ in breadth. The Fœtus was situated in the left side of the abdomen, surrounded by the intestines, and completely envelopped in the secundines. On opening the membranes no Liquor Amnii was found.

The child, which was a female, was in a highly putrid state. It appeared that the perforator had penetrated only the external lamella of the presenting portion of the membranes.

Dr. Hamilton observes upon this case, that when the consultation was held, it appeared to be utterly impossible to open the head with safety, because the depth of the pelvis anteriorly, and the contracted state of the inferior aperture, rendered it impossible to introduce two fingers, so as to guard and direct the points of the perforator. And that, "As it seemed exceedingly problematical how far it was justifiable to destroy the child, while the chance of the woman surviving the operation was rendered doubtful, from the great resistance that would be experienced in making the extraction, another reason for waiting, was to ascertain, by the effects of the uterine action, whether the child might not be of an unusually small size." He further observes, that "When the situation of the patient became almost hopeless, it was judged more prudent to attempt the delivery by embryulcia, than by the Cesarean operation, because the head seemed a little lower than formerly, and no decisive evidence of the child being alive had occurred even for a day before labour commenced." He says, "It may, therefore, be concluded that, in some species

of defective pelvis, although the apertures be such as to be capable of allowing the mangled child to be extracted through them, it is impossible to diminish the head sufficiently with safety, or, that being accomplished, the extraction would be productive of such injury as to cause death." And he adds, " In confirmation of this latter proposition, it may be remarked, that where the operation of Embryulcia has been performed, *in cases of extreme deformity of the pelvis*, it has most commonly been succeeded by the death of the woman; for every such case where this event has not happened, may be regarded as an exception of the general rule." Outlines. P. 285 to 287.

I have the honour to be acquainted with an Accoucheur of very great eminence, who, in the course of a long, and extensive practice, has been called to five women in labour, whose pelves were so excessively distorted, that he found it impossible to deliver them by embryulcia, although he has, I believe, had occasion to use the perforator and crotchet, as frequently as any man in the kingdom. In *one* of these cases the presentation of the child was preternatural, and judging it proper to make an attempt to turn the child, he, by great perseverance, succeeded in passing his hand through the superior aperture of the pelvis, but he met with so much difficulty

in effecting this, that he immediately relinquished his design of attempting to bring down the feet of the child, and was satisfied with being able to disengage his hand. As the Cesarean Section was not submitted to, in any of these cases, *all the ten lives* were lost. In all these instances the deformity was induced in consequence of Malacosteon.

Since *Malacosteon* is a disease of rare occurrence; and since Rachitis frequently affects children, and, when it is not soon cured, very generally occasions distortion of the pelvis; it may, at first view, appear rather singular, that so great a proportion of the cases, mentioned in this letter, which have rendered the Cesarean operation nenecessary, have been produced by the former disease. This circumstance will, I conceive, admit of a satisfactory explanation on the following grounds. When *Malacosteon* takes place, and attacks the bones of the pelvis, as we have hitherto been unable to put a stop to its progress, these bones become gradually more distorted, till the disease, or, if the patient be a child-bearing female, till a difficult labour, and the disease combined, prove destructive of life. But when *Rachitis*, which is an infantile disease, occurs, the pelvis is proportionally of small dimensions; and although it should at that time be very

much distorted, if the child, as is frequently the case, be perfectly cured, the successive expansion of this part, during the future growth of the body, may sometimes proceed so far, as to render the diminution of its capacity not very considerable, and will generally enlarge it sufficiently to allow of delivery by *Cephalotomia*.

I could adduce many more instances of women dying undelivered in this kingdom; but it is not in my power to bring forward a single case, which has occurred in Great Britain or Ireland, where the life of the parent, or child, has been preserved, by the powers of nature, after labour has commenced and delivery *per vaginam* found impracticable; unless the case of Elspet Grant may be so considered. It is related in the 2d. Vol. of a very valuable work, namely, Essays and Observations Physical and Literary. And as it is the only case upon record, with which I am acquainted, that can be regarded as a Cesarean Birth, effected solely by the powers of nature, I will relate it in this place.

"In April 1736, Elspet Grant, in the parish of Moy, being with child took her labour pains. After she had continued three days with the child in the birth, two cracks, as if the rafters of the house had broken, were heard about the sick

wife, and her belly was rent from near the navel with a squaint downwards, and to the left side, to near the share-bone. At this rent the child came into the world, the after burthen was brought away, and the entrails were seen.

The rent was cured without any other application than that of Butter mixed with white Sugar, and its scar was only as the scratch of a big pin.

These facts are attested by the judicial oaths of Anna Kennedy, a midwife, and Mary Ogilvie, a neighbour, who were present when the rent was made, and the child came out of it; of Margaret Dallas, who assisted to bring away the after burthen; of Robert Smith, who saw the rent, and entrails immediately after this, and of Isabel Tarrel, who afterwards examined the scar. Taken and Subscribed by James M^c^ Quean, Younger, of Corrinbrough, baillie to the Laird of Mackintosh, at Moy Hall, Nov. 22d. 1738. Of which the original subscribed copies are kept by the Secretaries of the Philos. Soc. of Edinburgh."

The Annals of other nations afford us only very few examples of a recovery, *by the powers of nature*, under the circumstances mentioned above. Of these I find no more than one, in which the fœtus is said to have remained

in the Uterus, namely, the curious case of *Lithopœdion* related by Albosius, at the end of Bauhin's Translation of Rousset, and illustrated by an engraving. As I have a remark or two to make upon the case, I shall give the following short account of it. *Columba Chatry* of Siena, being near the full term of utero-gestation, was attacked with severe labour-pains, which after some time became more tolerable. The motions of the child were observed to become more languid, and afterwards ceased. She remained so much indisposed as to be confined to her bed three years; nevertheless she carried this child to her death, a period of twenty-eight years; and being then opened, the uterus and infant are stated to have been found in a petrified state.—That the uterus does occasionally become very much indurated, I have not the least doubt, as many cases of this kind are recorded by authors of great respectability. See Lieutaud Hist. Anatomico-Med. Tit. *Uterus scirrhosus & cartilagineus, & Uterus lapidescens.* But as this is the only case I have met with, where the impregnated uterus is said to have been completely indurated, and the patient has so long survived the morbid change; as the circumstance of an extra-uterine conception, was not, I believe, understood at the time Albosius wrote; and as

we have several instances recorded of females carrying extra-uterine fœtuses, either incrusted with an indurated mucus, or actually converted into a hardened state, during many years (See Dr. Garthshore's Observations on Extra-uterine cases, inserted in the 8th Vol. of the London Medical Journal); I am of opinion, that the situation of the infant, in the case he relates, was either *ab origine* extra-uterine, or rendered so, in consequence of a rupture of the uterus, and that the indurated secundines were mistaken for this viscus.

All the other instances, with which I am acquainted, were evidently cases of ruptured uterus. Since they are not numerous, and place the powers of nature in a very striking point of view, as well with regard to what they can effect, as what they can sustain, upon particular occasions, I shall in this place insert a brief account of these cases.

The case of a woman at Thoulouse is related by Astruc, *L' Art d' Accoucher*, p. 288, whose uterus was ruptured by the violence of her labour-pains; the child passed into the cavity of the abdomen, and remained there twenty-five years, as was proved by an examination of her body after death.

M. Debois has communicated the case of a woman at Rochfort, in the *Hist. of the Roy Med. Soc. at Paris.* V. 1. for 1776. who, in her fourth labour, after sustaining the most excruciating pains for thirty years, suffered a rupture of the uterus, and the child passed into the abdomen. After two months the integuments of the abdomen began to inflame, and four ulcers were formed. In the third month, after the inflammation had taken place, this poor woman was removed to the Hôtel Dieu at Paris, and the bones of a full grown child were extracted after dilating the largest of the abdominal ulcers. In four months, this woman recovered her looks and strength, but had a fistulous ulcer at the navel, which besides a white purulent matter, sometimes discharged the fæces.

A case similar to the last is inserted in the *Journal Encyclopedique* for June 1777. And M. Littre has communicated one of the same kind in the *Mem. de l' Ac. Roy. des Sc. an.* 1702, p. 234, which differs from those only, inasmuch as the bones of the child. in this instance, made their way through the *rectum*.

Th. Bartholin in his *Diss. de Insolitis Partus Humani Viis* has furnished us with four cases, in all of which the uterus was evidently ruptured

either in the latter end of pregnancy, or in labour, and the child passed into the abdominal cavity. In two of these cases the fœtus made its way through the integuments of the abdomen, and in the two others passed by the intestines. Of these women three recovered entirely, and the fourth survived some time, and voided many of the bones of her fœtus by stool, but did not live sufficiently long to discharge them all.

To these might be added some cases of fœtuses removed from the uterus in a similar way, either wholly, or in part, by the powers of nature, in the *earlier months* of pregnancy. See Dr. Garthshore's Paper, referred to above. But I shall not here enter into the consideration of these, as they are not accompanied with equal danger.

If, in addition to the instances already adduced, we suppose an equal number to have occurred, wherein women, who could not be, or at least were not, delivered *per vaginam*, have recovered *by the powers of nature;* and compare them with the very great number of females, who have perished with their infants unborn, the proportion will be found so extremely small, as scarcely to leave us any expectation of seeing our unfortunate patients restored by a reliance on these powers. A recovery, indeed, under such circumstances, is

hardly to be wished, for the sufferings of the poor woman must necessarily be so great, and continue so long, that to perish in labour, dreadful as it may appear, seems the more desirable lot.

On the other hand, the number of lives, saved by the Cesarean Section, bears a very large proportion to the number of the operations, as far as we are enabled to judge from the cases on record; and the sufferings of the patient have been comparatively small. This operation, therefore, in cases of extremely distorted pelves, is greatly preferable to either the combination of Embryulcia with the Section of the Symphysis Pubis, or a reliance on the powers of nature.

Having now adduced such arguments, as will, I trust, convince a very great majority of medical men, *that the Cesarean Operation is not only a justifiable, but a valuable and necessary resource;* and, *that the Operator, in the case of Ann Lee, alluded to by you as a late occurrence, neither deserves reprehension for his inexcusable ignorance, nor cruel inattention;* I shall conclude this letter with expressing a hope, *that you will be less disposed, in future, to bring forward unfounded accusations against your professional brethren,* and with subscribing myself,

Sir,

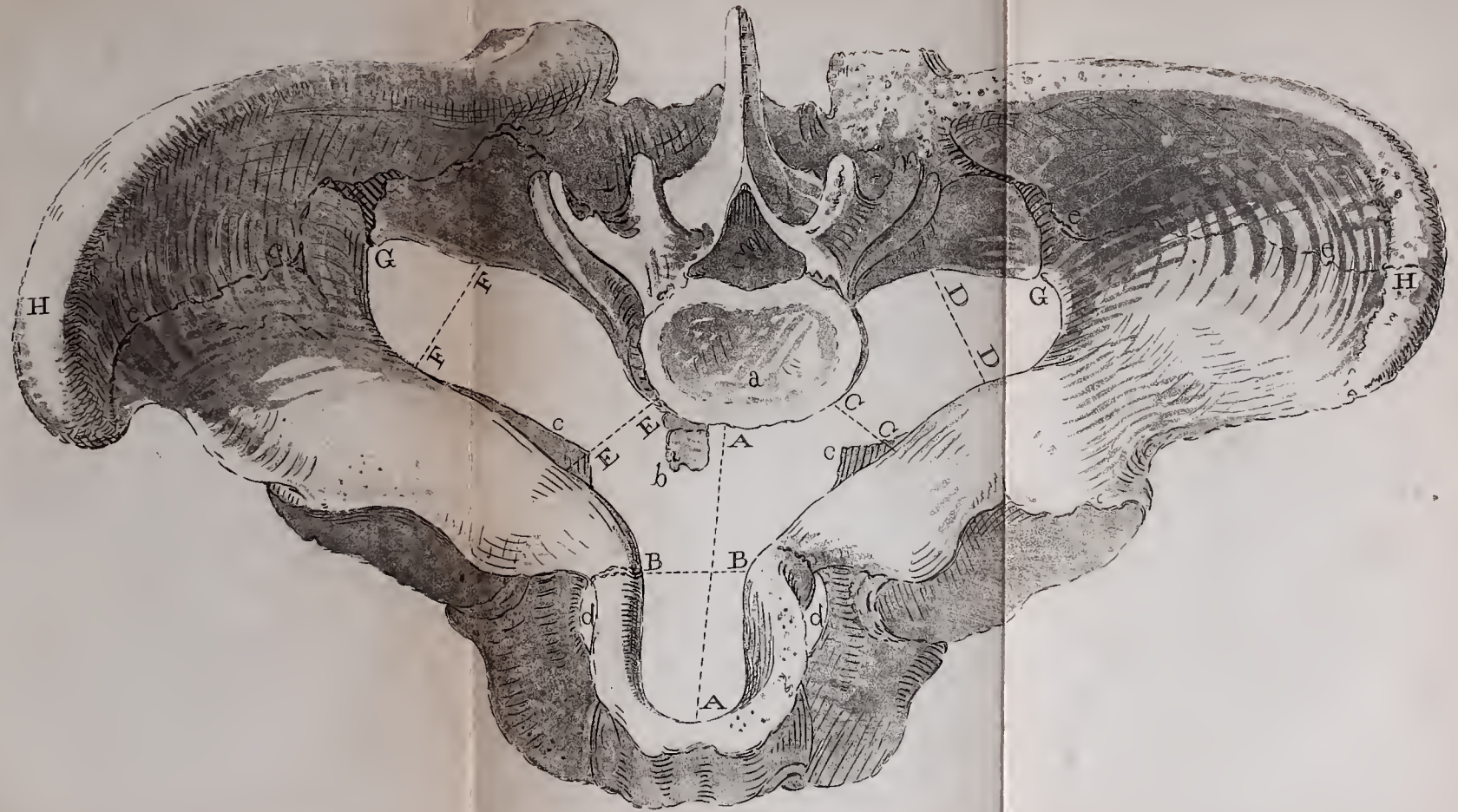
Your most obedient Servant,

JOHN HULL.

CORRECTIONS.

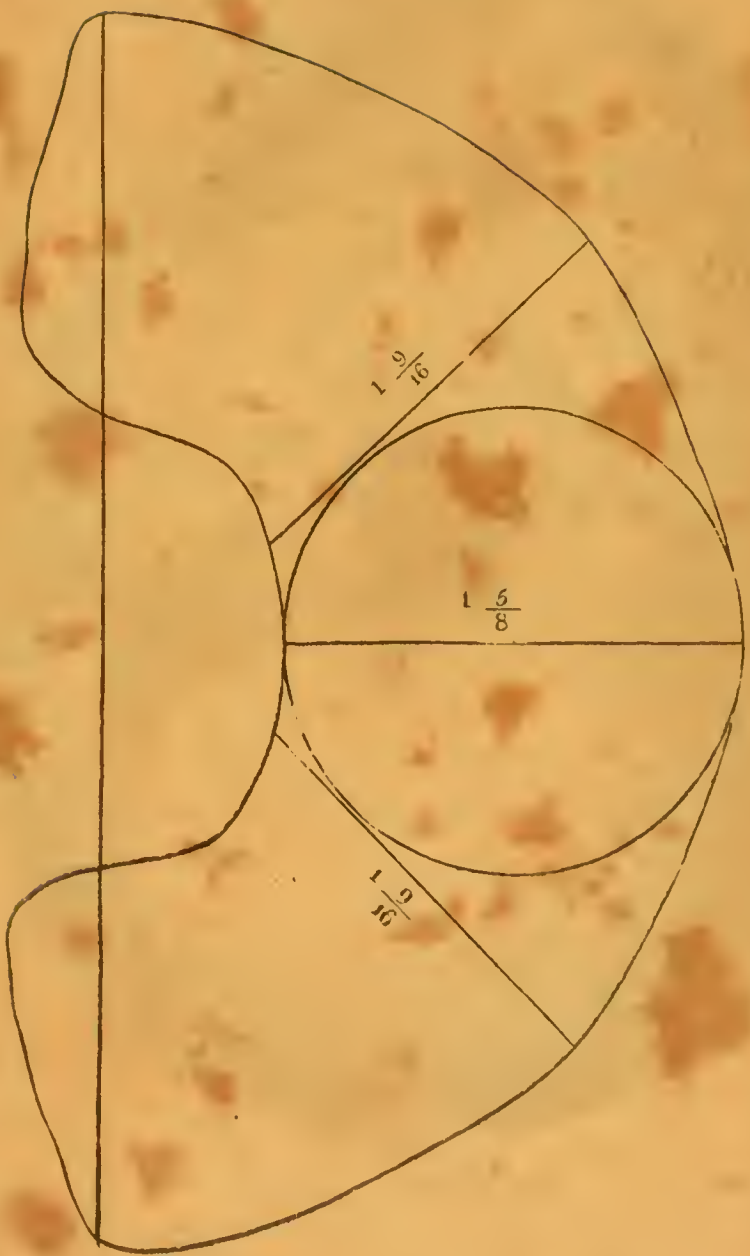
Page.	Line.	
4—	2.	Before publication insert intended.
22—	25.	For Quæ. read Quæ,
28—	2.	For etram read etiam.
31—	23.	For *louge* read *longe*.
46—	4.	For wahr scheinlich read wahrscheinlich.
159—	16.	Before acute insert more.

Tab. I.



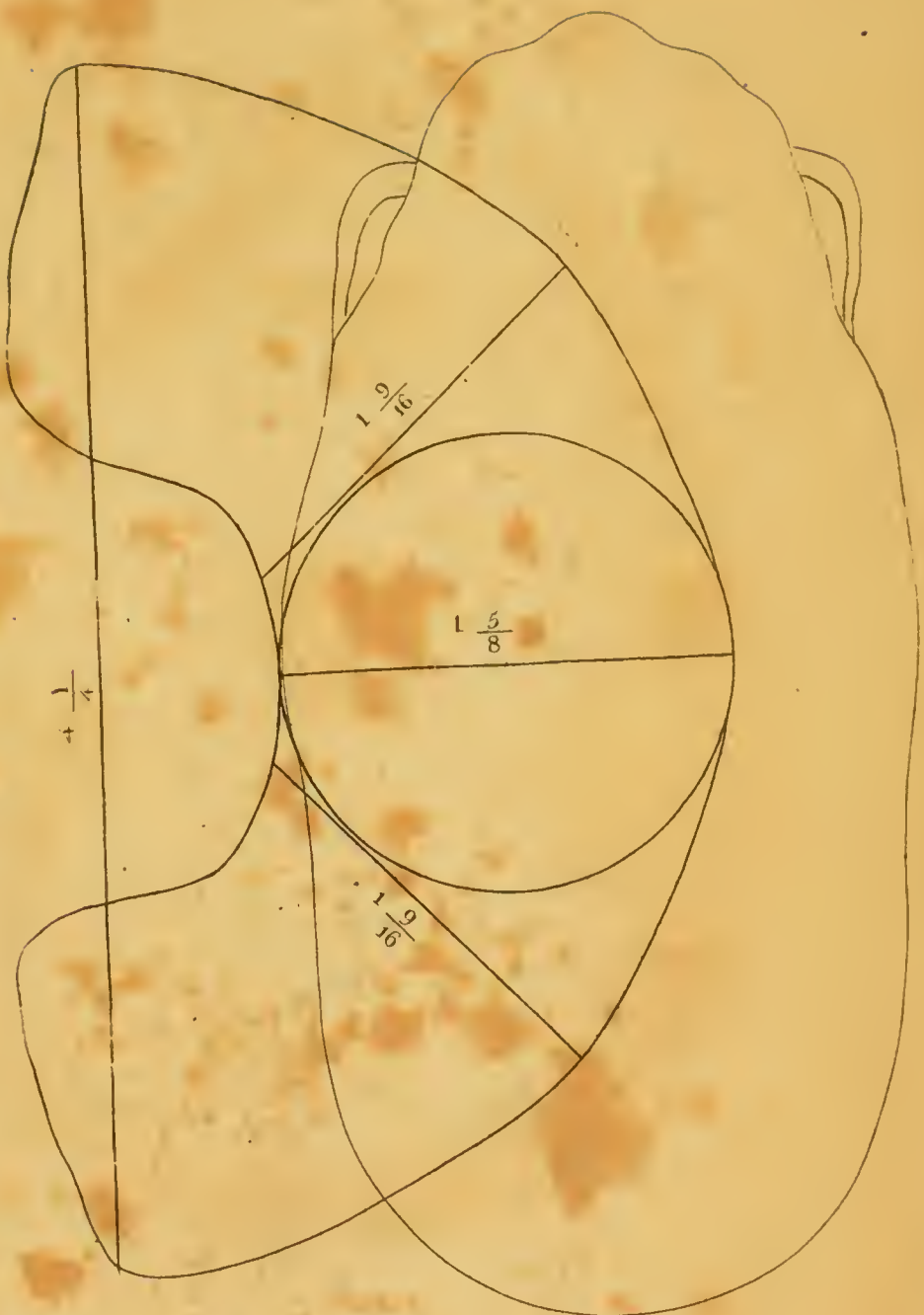
Tab. II.

Pl: 3.



C. Pye delin. et fec.t

Pl. 3.



a
b
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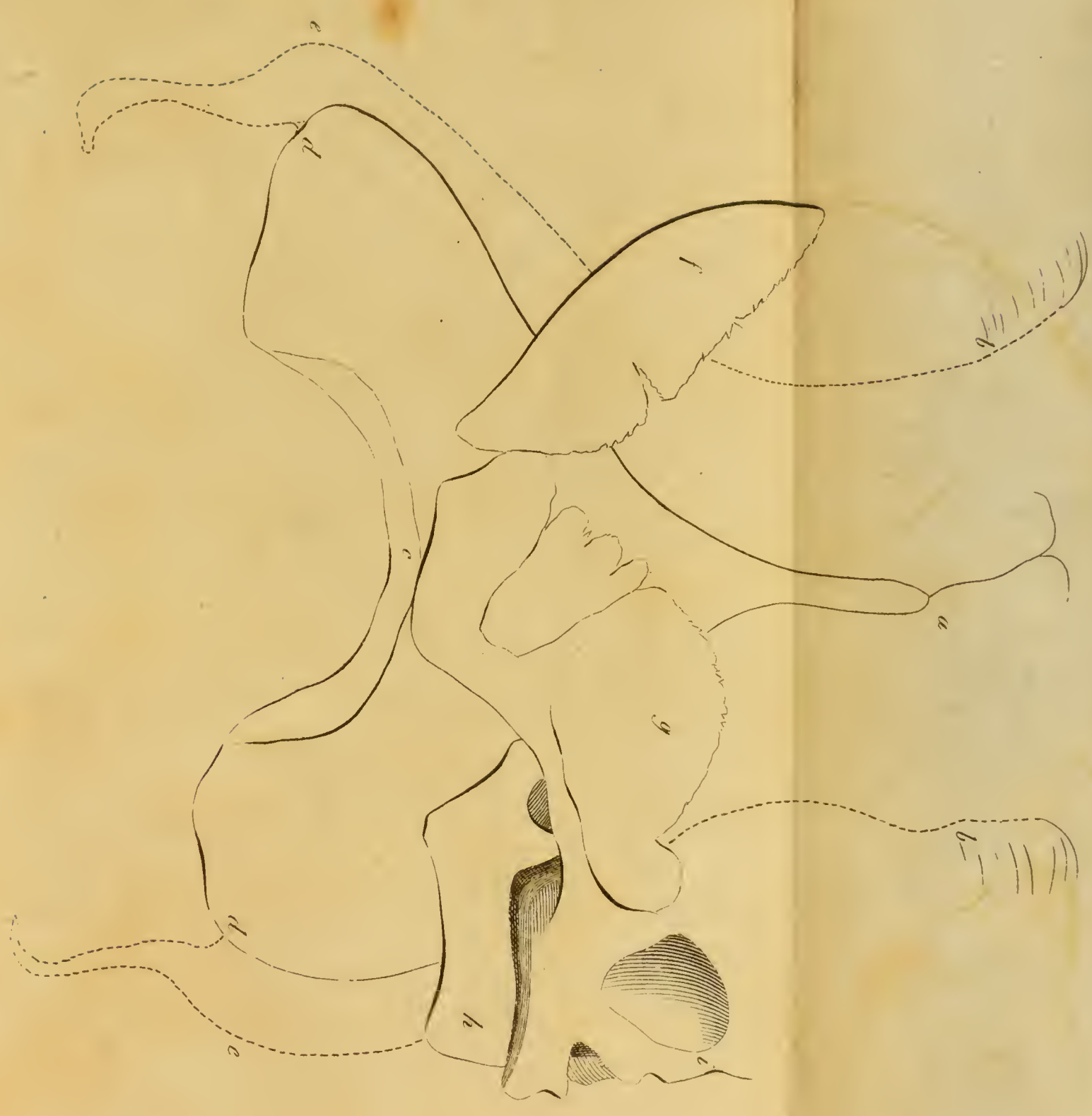
e
a
i
g
a
g
d
e
b
c